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An Analysis of Nonconserving and Conserving First Grade Children's Dictated Language Experience Stories According To Five Characteristics of Plot Structures and Piaget's Decreasingly Egocentric Speech Features

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ABSTRACT

AN ANALYSIS OF NONCONSERVING AND CONSERVING FIRST GRADE
CHILDREN'S DICTATED LANGUAGE EXPERIENCE STORIES
ACCORDING TO FIVE CHARACTERISTICS OF
PLOT STRUCTURES AND PIAGET'S
DECREASINGLY EGOCENTRIC
SPEECH FEATURES

by

CAROLYN JEAN JACKSON

Purpose

The content and language structure of stories created by young children have been for many years an interest to researchers who have attempted to investigate children's thinking as reflected in their stories. These stories, believed to consist of children's actual thoughts during the story creation process, may reflect thinking and can be examined and analyzed according to identified criteria. The five characteristics of plot structures investigated for this study were story length, T-units, words per T-unit, characters, and incidents. Piaget's decreasingly egocentric speech features were causality, logical justification, and sequence.

The purposes of this study were first, to examine non-conserving and conserving first grade children's oral

expression as reflected in their stories, and second, to determine if a relationship existed between characteristics of plot structures and egocentric speech features.

Procedures

The subjects for this study were 181 first grade children enrolled in four elementary schools located in largely suburban residential areas of DeKalb County of metropolitan Atlanta, Georgia.

The study consisted of two phases. Phase one involved a study of conservation tasks to identify the children as nonconservers or conservers. A standardized test of conservation was administered individually. There were 134 nonconservers and 47 conservers.

Phase two consisted of the collection and analysis of two language experience stories for each subject for a total of 362 stories and of establishing the reliability of the judges. The language samples were studied to determine any significant differences in the frequency of the plot structures and the presence or absence of the decreasingly egocentric speech features. To establish interrater reliability four judges rated a random sampling of ten subject's stories and a two-way analysis of variance was employed.

Results

The results of the interrater reliability revealed that the judges were highly consistent in their ratings with the exception of the variable incidents. The median reliabilities

for story one and story two were each .99, respectively ($p < .05$).

The analysis of children's stories according to the five plot structures did not provide substantiating evidence that conserving children had a more mature sense of story than non-conserving children. It was found that nonconserving children's stories contained significantly fewer words and T-units than conserving children's stories. There were however, no significant differences in the average number of words per T-unit, number of characters, and number of incidents in nonconserving and conserving children's stories.

The analysis of children's stories according to Piaget's decreasingly egocentric speech features revealed no statistically significant differences in the amount of causality, logical justification and sequence in nonconserving and conserving children's stories.

It was found that logical justification and sequence were positively and significantly related to story length, T-units, characters, and incidents. The variable causality was not related to any of the plot structures. However, causality was related positively and significantly to logical justification and sequence.

Conclusions and Implications

Nonconserving and conserving children can retell a story previously heard much better than they can create their personal stories.

Conserving children's language is more linguistically complex than nonconserving children's language.

Nonconserving and conserving children's cognitive functioning and understanding of story structure can be inferred to some degree from their stories.

Examining children's oral language production merits further research to investigate additional features of story structure and cognitive development.

Story retelling is a better measure of children's linguistic complexity than creation of stories.

Classroom teachers and reading specialists can use children's stories as sources of diagnostic information to study children's levels of cognitive functioning and understanding of story structure.

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A DISSERTATION

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the Degree of Doctor of Philosophy in Educational
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Instruction in the College of Education
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1980

AGENCY RECORDS

I would like to pay special tribute to my friends
and colleagues, Dr. Herman Hall, Dr. John Davidson, Dr.
Lucretia Fayton, Dr. Hugh Hall, and Dr. John Hall.

To my mother, Dr. Herman Hall, whom I regard as my
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and who has helped me in many ways. I am grateful to you
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who has helped me in many ways. I am grateful to you
for your help and support.

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Chapter 1

INTRODUCTION

The content and language structure of stories created by young children have been for many years an interest to researchers who have attempted to investigate children's thinking as reflected in their stories. These stories, believed to consist of children's actual thoughts during the story creation process, may reflect their thinking and can be examined and analyzed according to identified criteria.

The first purpose of this study is to examine nonconserving and conserving first grade children's stories for the frequency of the plot structures and the absence or presence of Piaget's decreasingly egocentric speech features. The second purpose of this study is to determine if a relationship exists between the plot structures and the decreasingly egocentric speech features.

One of the leading pioneers in research of children's thinking is Jean Piaget. His research has contributed significantly to the belief that there is a relationship between young children's language and their thought processes. Piaget and his colleagues collected many language samples of children's thought processes and discovered that these

processes were inchoate stages of cognitive development. From his research he discovered four distinct stages of cognitive development based on the commonality of characteristics of these stages in children of the same ages.

The present study describes one of Piaget's stages of cognitive development--the preoperational period of cognitive development in young children. During this stage Piaget believes that young children are egocentric and that the absence of specific characteristics in their spontaneous speech reveals their egocentrism. Thus, it may be theorized that if children's spontaneous speech can be recorded, transcribed, and analyzed according to the scarcity of these characteristics in speech, then children's oral language samples as reflected in the stories they create may reveal children's egocentric natures.

While the research of Piaget and others suggests that children's spontaneous speech may be a reflection of their thoughts, there is little or no empirical evidence to support that a relationship exists between plot structures and egocentrism. Although there have been recent investigations of young children's spontaneous and oral and written extemporaneous responses to "tell me a story" there is no reported evidence which investigated young children's stories using the criteria employed in this study.

Researchers report that children's stories contain information about the complexity of their language. There is, however, a substantial gap in our present knowledge about

what these stories reveal about children's thoughts and their oral language. From such a study of the relationship between plot structures and egocentrism, much can be learned about levels of cognitive development and understanding of story structure that may serve as a basis for future contributions in reading research.

The limited body of empirical evidence from such investigations as those of Boyd and Mandler (1955), Pitcher and Prelinger (1963), Ames (1966), Jones and Buttrey (1970), Willy (1975), Brown (1977), and Applebee (1973, 1976, 1977, 1978) generally tends to support the belief that children's stories contain pertinent information regarding the children themselves, notably their emerging sense of story and decreasing egocentrism. In spite of current concerns with children's stories, and in spite of current interest in their cognitive development, a precise relationship between sense of story and egocentrism as reflected in children's stories has not been investigated. For such a study it would be necessary to examine children's stories for characteristics of plot structures and decreasingly egocentric speech features.

This study was conducted in an attempt to provide tangible evidence concerning the relationship between the plot structures and egocentrism. This study may contribute to establishing empirical criteria for the evaluative content of children's stories. This study may also confirm researchers' belief that the content of children's stories, indeed, reflect children's thoughts.

Significance of the Present Study

Since no study analyzing nonconserving and conserving first grade children's dictated language experience stories according to the five plot structures and decreasingly egocentric speech features has been conducted, this study may be an important contribution to reading research and may provide data, questions, and directions for future research on children's cognitive development and sense of story.

The purposes in analyzing first grade children's language experience stories are two-fold. First, children at this age are better able to tell a story than write a story, and second, their stories correspond to their oral language, thus, providing the rationale for examining stories dictated by first grade children.

This study may provide evidence that what children say in their stories may be a reflection of their thoughts. Thus, such stories may provide evidence about children's decreasing egocentrism and sense of story. If the decreasingly egocentric speech features relate positively and significantly to the plot structures, then this relationship may be established in children's stories which then may be examined and analyzed for tangible evidence of the relationship of egocentrism and sense of story. If a relationship is found, then there are theoretical implications, as well as implications for beginning reading instruction which may provide practical information for classroom teachers and reading specialists.

The Problem

Research related to children's cognitive development and sense of story as reflected by their dictated language experience stories is practically nonexistent. Research related to children's oral language and thought seems to suggest that theoretical controversies exist and that the precise relationship between children's language and thought remains an area for research. Although the analysis of children's stories for quantitative measures of language complexity has received much attention, children's stories need to be analyzed to determine if a relationship exists between egocentrism and plot structures as reflected by the stories children create and tell.

Purpose of the Study

The purpose of the present study is dual in nature: First, to examine first grade children's oral language expression as reflected in their dictated language experience stories, and second, to study what these stories reveal about the relationship between plot structures and decreasingly egocentric speech features. This study lends itself to two comparative analyses of nonconserving and conserving children's stories. The first analysis is to determine the frequency of the five characteristics of plot structures: story length, T-units, words per T-unit, characters, and incidents. The second analysis is to determine the presence or absence of the decreasingly egocentric speech features: causality, logical

justification, and sequence. Finally, both categories of story characteristics are compared.

The inquiry for this study centers on the examination of the following research questions: Are there significant differences between nonconserving and conserving first grade children's dictated language experience stories according to five characteristics of plot structures and Piaget's decreasingly egocentric speech features? Other research questions which stem from the main research question are as follows: Do nonconserving first grade children's dictated language experience stories contain significantly fewer of the five characteristics of plot structures than conserving children's stories? Do nonconserving first grade children's dictated language experience stories contain significantly fewer of Piaget's decreasingly egocentric speech features than conserving children's stories? Do the five characteristics of plot structures: story length, T-units, words per T-unit, characters, and incidents positively and significantly correlate with Piaget's decreasingly egocentric speech features: causality, logical justification, and sequence?

Research Hypotheses

The main research hypothesis for this study is as follows:

1. There are significant differences between nonconserving and conserving first grade children's dictated language experience stories according to five characteristics of plot structures and Piaget's decreasingly egocentric speech features.

Other research hypotheses which stem from the main research hypothesis are as follows:

2. Nonconserving first grade children's dictated language experience stories contain significantly fewer of the five characteristics of plot structures than conserving children's stories.

3. Nonconserving first grade children's dictated language experience stories contain significantly fewer of Piaget's decreasingly egocentric speech features than conserving children's stories.

4. The five characteristics of plot structures: story length, T-units, words per T-unit, characters, and incidents positively and significantly correlate with Piaget's decreasingly egocentric speech features: causality, logical justification, and sequence.

Definition of Terms

The following definitions and explanations are those intended in this study:

Nonconservation is the inability to center on one aspect of an object or to reason with a single dimension. The child does not view an object as being unchanged or modified despite manipulations. For example, two equal size balls of Play-Doh are held before the child. One ball is rolled into a hot dog shape. The child is asked, "Which has more?" The nonconserving child will say that the hot dog has more because it is longer, thinner, or bigger.

Conservation is the ability to realize and understand that certain characteristics or attributes of an object are constant and do not change even though it changes in appearance through manipulation. For example: X X X X is the same as X X

X X.

Conservation Tasks are activities designed to measure areas of conservation. Qualities such as substance, weight, continuous and discontinuous quantity, number, area, distance, length, and two-and three-dimensional space are usually studied. Ordinarily, a child is asked to make comparisons after the appearance of an object or substance is transformed by some manipulation.

Transformation is the sequence of various changes that occur in an object through manipulation.

Egocentrism refers to the child's thinking for himself without troubling to make himself understood nor to place himself at the other person's point of view. Egocentrism entails a certain lack of direction in thinking, owing to the fact that there is nothing in egocentrism which tends to make thought conscious of itself, and consequently, to systemize or direct successive judgements (Piaget, 1972).

Preoperational Period of cognitive development refers to a stage in the child's thinking behavior that is in the "pre-thought" stage and is approaching the concrete operational period. Egocentrism is a characteristic of this stage.

Concrete Operational Period of cognitive development

refers to a stage in the child's thinking behavior which allows the child to operate in thought on concrete or real objects and their representations rather than rely solely on surface appearance of objects.

Cognition includes the intellectual activities of the mind such as thinking, knowing, remembering, perceiving, recognizing, or generalizing.

Juxtaposition is a feature in the child's thinking which refers to the lack of explicit relations between propositions. It is the absence of direction in the child's mind, that is to say, from a lack of clear relations between successive judgments (Piaget, 1972). For example, a child's story may be considered juxtaposed and fragmentary when it is composed of a large number of unspecific and unrelated sentences.

Language Experience Story is a written account composed of an explanation or story dictated entirely by the child. Such a story reflects the language and background experiences of the child. Language experience story is not to be confused with the total language experience approach which is a method of instruction built upon using reading materials created by writing children's spoken language.

Sense of Story or understanding of story structure is a personal construct which develops and progresses toward a mature internalized representation of oral language. This internalized representation aids comprehension in listening and reading and allows the child to make predictions about possible meaning.

Causality, or the causal 'because,' refers to the relation of cause and effect, or a is the result of b, between two events and causality involves explanation. For example, the preoperational child can anticipate cause and effect relationships, but cannot think about the steps in between. Any objects and events that occur together are assumed by the child to have a causal relationship.

Logical Justification or the logical 'because,' denotes a relation, not of cause and effect, but of implication of reason and consequences. What the 'because' connects here is no longer two observed facts, but two ideas or two judgments. The absence or scarcity of 'because' in logical relations is the outcome of certain unconsciousness, or an inability to attain conscious realization. According to Piaget (1972), both the absence of direction and difficulty in conscious realization are known to be, if not the product, at least the indirect result of childish egocentricity.

Sequence, or the causal 'sequence,' is the logical order of incidents or events which forms an integrated and coherent whole in a child's story.

Story Length refers to the length of a child's story as measured by the actual number of words.

T-unit, or minimal terminal unit, was developed by Hunt (1965). The T-unit includes one main clause plus all subordinate clauses attached to or embedded within it. The T-unit is used as a more reliable index of linguistic complexity than a sentence because it involves segmenting the language

into the shortest units which can stand on their own. For example, this excerpt from a child's story contains six T-units, but only four sentences: "One day we went down to my uncle's farm./ We walked in the creek./ My brother found some teeth from a fish/but one was gone./ Then we walked on the sand/and it was slippery."

Average Number of Words per T-unit is the total number of words divided by the total number of T-units in a child's story.

Characters are real and/or imaginary people, animals, or inanimate objects that "come alive" in a child's story.

Incidents are integrated or unintegrated events that may occur in a particular or no particular sequence throughout a child's story.

Limitations of the Study

Several limitations of this study should be noted. First, the subjects were selected from four elementary schools in a metropolitan Atlanta school system. These schools were identified by administrative school officials as being cooperative and representative of a multi-ethnic and racially-balanced group of children. However, the subjects may not be representative of the general population of first grade children. In addition, these children were representative of low to high income backgrounds. Thus, the results of this study would only be generalizable to racially-balanced groups of first grade children from these socio-economic backgrounds.

While children of different racial backgrounds and sex are included in the sample population, the major focus of the study was not to examine the uncontrolled variables of race and sex. However, these variables are included in the study to control for nuisance variation or undesired sources of variation that may affect the dependent variables. Unless controlled, these variables can bias the outcome of this study. Thus, the variables of sex and race are limitations since it is often assumed that there are language differences among children from various economic and cultural backgrounds.

Differences in the two types of oral language samples in the form of language experience stories must also be considered a limitation of this study. These language samples may not be indicative of first grade children's actual language use and may reflect only their language in limited situations.

While the study was conducted in a school setting, for experimental purposes, the children were either removed from their classrooms and placed in a different room or they remained in their classrooms for data collection. Whether or not such variation in treatment for the children interacted in some way with the test results can only be answered by further research.

Another limitation is related to differences that may exist in first grade children's maturational experience or lack of experience in story dictation. This study could not control for differences in children who have had experience in dictating stories as compared to children with little or no experience. Consequently, due to the large number of subjects in

this study it was virtually impossible to control for children's past or present experiences with listening to, telling, and dictating stories.

A Brief Description of the Research Design

The experimental population for this study consisted of 181 first grade children in four suburban DeKalb County elementary schools in metropolitan Atlanta, Georgia. The subjects were individually administered a standardized conservation test to determine if they were nonconservers or conservers.

Two dictated language experience stories were obtained from each subject. These stories comprised the source for the data for the subsequent analyses according to five characteristics of plot structures and Piaget's decreasingly egocentric speech features.

The investigator selected four independent judges to rate 362 stories according to two comparative analyses. A two-way analysis of variance was conducted to establish the reliability of the judges' ratings of ten subjects' stories. Pearson product moment correlation formula was used to calculate the correlation coefficients.

To test hypotheses one through three a complete factorial Multivariate Analysis of Variance procedure using Statistical Analysis System was employed. The dependent variables were story length, T-units, words per T-unit, characters, incidents, causality, logical justification, and

sequence. The independent variables were story, conservation, sex, and race. To locate significant differences after significant F ratios were employed, Tukey's Honestly Significant Difference (HSD) statistical procedure was performed to analyze each possible pair of mean scores and determine if the two means differed significantly from one another.

To test hypothesis four, the eight dependent variables were intercorrelated to determine which variable, if any, related positively and significantly with each other.

Overview

The purposes of this study are to examine first grade children's oral language expression as reflected in their dictated language experience stories and to study what these stories reveal about the relationship between plot structures and decreasingly egocentric speech features.

The first chapter consists of an introduction which contains the significance of the present study, the problem, purposes, research hypotheses, definition of terms, limitations, and a brief description of the research design. An overview is given of the five chapters in this investigation.

The review of the literature and research in Chapter 2 consists of three major parts: (1) children's development of sense of story, (2) the communication function of oral language in language experience stories, and (3) Jean Piaget's theory of language and thought.

Chapter 3 presents the procedures for conducting this

study which include a description of the research design, data collection which consists of two phases, an orientation session for the judges, reliability of the judges' ratings, judges' ratings of children's stories, and a summary.

Chapter 4 contains the analysis of data including the reliability of the judges' ratings, findings for the hypotheses, and ancillary findings.

Chapter 5 presents discussion of interrater reliability, hypotheses, differences in children's stories, implications for theory and practice and observations of children during story dictation, and recommendations for future research. Conclusions are also presented.

Chapter 2

REVIEW OF LITERATURE AND RESEARCH

The literature and research related to the present study are reviewed below in three categories: (1) children's development of sense of story, (2) the communication function of oral language in language experience stories and (3) Jean Piaget's theory of language and thought. A summary will constitute the last portion of this review.

Children's Development of Sense of Story

Available research has concentrated on young children's spontaneous oral response to "tell me a story," written responses to stimuli stories and pictures, written responses after reading and listening to fairy tales, and their written and oral response to stories after the reading of a story and then retelling it. This research suggested that children's stories provide some tangible evidence of their understanding and development of story structure. Furthermore, Piaget and other researchers believe that egocentrism may be reflected in children's oral language, thus implying that egocentrism may be reflected in the stories children create and tell.

The research shows several characteristics which seem

to emerge as sense of story develops. The studies of several researchers (Boyd and Mandler, 1955; Pitcher and Prelinger, 1963; Ames, 1966; Hunt, 1965, 1970; Willy, 1975; Brown, 1977; Applebee, 1973, 1976, 1977, 1978) indicate related characteristics that emerge in children's stories. This portion of the review will highlight the characteristics pertinent to the study of plot structures and thus, provide the rationale for the selection of these characteristics in the analysis of first grade children's stories.

Importance of Story. Children enjoy listening to and telling stories. They use their imagination, language, and background of experiences in listening to and telling stories. Jones and Buttrey (1970) provide a vivid description of what stories really are:

Stories are not books. They properly belong not to our tradition of print, but to speech, not to our skill in reading, but to our natural urge to listen and talk (p.1).

Many children possess this "...natural urge to listen and talk." According to these authors stories belong to children's everyday talk of their world and the people in their lives. Children's stories are woven into their everyday experiences. Such stories are the result of their imaginative talk, their need to express themselves, and their need to communicate their experiences. Pitcher and Prelinger (1963) contend that children who tell stories create them in such a way that the stories are knowingly acceptable to the children and supposedly to the listener. Children's stories may reflect

many things stemming from their thoughts, language, and experiences.

Garth H. Brown (1977) describe story as being quite crucial and vital to the people's daily lives in order to make sense of the world. Children need story creation in their lives to help them make sense of the world in which they live. Brown believes that:

We resort to story to make entity of experience; to give our experience form and balance; to make generalizations about the world. We structure and often modify experience when creating stories to our everyday life and also often modify our own internal representations of experience when listening to the stories of others (p. 357).

Stories are vital in children's lives because for them the world of stories is part of the world in which they live. The events of stories are as important and meaningful to them as everything else that happens. Stories provide opportunities for children to create in their story telling events that may or may not be true.

Research studies investigating children's stories contribute to the rationale for the selection of the characteristics of plot structures in this study. These studies are pertinent in presenting supportive evidence of children's development of sense of story. The following research is presented as related to the characteristics of plot structures and includes characters in children's stories, story length, narrative conventions, story expectations, incidents, sense of story, importance of story telling and retelling, T-units, and a summary of the plot structures.

Characters in Children's Stories. Characters, whether human or animal, animate or inanimate, are considered important elements in children's stories since children tend to identify with them. Boyd and Mandler (1955) investigated the written responses of 96 third grade children to stimuli stories and pictures when the main characters were either human or animal. These authors presented children with both stimuli stories and pictures in an attempt to obtain a general idea of children's reaction to human characters. They found that when children were confronted with stimuli stories and pictures containing human or animal characters, the children preferred stories with human characters than with animal characters.

An interesting area of Boyd and Mandler's investigation was concerned with the type of story and reading material with which children were constantly confronted. Their research suggested that preschool children's stories were usually dominated by animal characters, whereas older children's stories were dominated by human characters. They found that although children were exposed mainly to human characters in their reading material, the children preferred animal stories, but still tend to identify with human characters in stories.

A similar study of characters in children's reading materials was conducted by Child, Potter, and Levine (1946). These authors found that third grade basal readers contained almost three times as many more human characters in everyday situations than any other type of story characters. Human

characters were portrayed in desirable roles while animal characters were often portrayed in undesirable roles. In other words, the reading material of older children determined their identification with either human or animal characters.

Consequently, older children's stories contain more human than animal characters. In another study Bill (1950) found that children between the ages of five and ten tell more lengthy stories with animal characters than with pictures of people. His findings are contradictory to the findings of Child, Potter, and Levine. Although children's stories are dominated with more human than animal characters as they get older, children still tend to identify with and tell longer stories that contain animal characters.

One of the most significant studies on children's stories was conducted in 1963 by Pitcher and Prelinger who collected 360 stories from 137 children, ages two to five. These authors investigated young children's elaborations of fantasies as reflected in their spontaneous stories. Pitcher and Prelinger's main analysis was limited to a few categories, one of which represents the main characters, such as human, animal, or object, and provides insight into the way in which children represent themselves as the creators of important action. These authors postulated that the characters in children's stories may often represent the children themselves.

Another category that Pitcher and Prelinger distinguished represented the dominant themes of interaction among the characters. The interaction involved the incidents

happenings, actions, or events which were classified in terms of their dependence upon inner natures of the characters. They found that children's stories were especially concerned with actions and happenings related to people and animate characters.

Of particular interest was Pitcher and Prelinger's dimension of the inner complexity of characters. Their study was based on the hypothesis that stories whose characters showed inner differentiations (person or animal character representing a person and not acting as a whole but shows interaction of the internalization process) might reflect children's awareness of internal complexity within themselves as well as in others. The results generally suggested a trend, although stories of five-year-old children were little concerned with such interaction. Pitcher and Prelinger suggested that studies of older age groups should be conducted to show that possibly this trend continues in children.

A third dimension of Pitcher and Prelinger (1963) was the range of activity or passivity of characters. One of their hypothesis was that as children increasingly mature, the stories they create will increasingly show activity rather than passivity (things that happen to the characters in the stories rather than their active deeds). These results were somewhat inconclusive and indicated that activity and passivity were equally distributed for all characters in children's stories.

Action versus thought processes were the fourth dimension

studied by Pitcher and Prelinger. Their results suggested that as children mature they attribute more detailed processes of thinking and feeling to the characters in their stories. The amount of attribution was quite small, but rates of increase and of variability of ratings on these dimensions became larger among five-year-olds. Pitcher and Prelinger suggest that research should be conducted to show these trends with older children.

Research on the characters in children's stories indicate that characters may reflect the children themselves or people close to them. Pitcher and Prelinger's study focused on the analysis of the nature of characters in children's stories. They believed that one of the first and foremost sources of significant experiences for children was the interaction with parental figures and other people close to them. It was found that children's stories were especially concerned with actions and incidents related to people and animate characters. Animistic thinking may assume a dominant place in young children's minds and consequently, the main characters in their stories may be objects, animals, or people.

The increasing number of main characters in children's stories seems to be influenced by the age of the children. Pitcher and Prelinger (1963) compared children, ages four and five, with other children, ages two and three. These authors found that the former group of children included altogether more characters, especially people and objects, in their stories than did the latter group of children. The results

were that the use of conventional story characters increased from zero at ages two to 33.3 percent of the stories at age five. In addition to an increased number of characters, Pitcher and Prelinger found a variety of characters at ages four and five indicating the child's increased knowledge of the world and range of experiences.

Pitcher and Prelinger also studied an interesting variation among various characters in stories of four-and five-year-old children. Their findings implied that characters are not what they seem to be because children at this age intensify their distinctions between real and unreal characters as well as scrutinize the relationships among the characters. For example, who does what to whom, what is cause and effect, what is real or unreal, and what is true or false?

Although animism is characteristic of the thinking of young children, some four-and five-year-old children self-consciously distinguished animate and inanimate characters. Pitcher and Prelinger present as examples: 1) a real camera that sings, dances, and wets the bed; 2) telephones and clowns that are real or toys; and 3) a real king who could be mistaken for a toy king. These authors concluded that characters are not what they seem to be and some stories children tell are not really true, but are extensions of the children themselves. It was also found that many of the characters are unidimensional, that is, characters are all good or all bad, or all young or all old.

In Willy's (1975) study of six-and seven-year-old new literates, he found that the characters in children's stories were quite familiar to the children. These characters were either parents or children, male or female, good or bad, brave or cowardly, and young or old. The plot structure of children's stories was defined as what finally happened to these major characters.

A study similar to Pitcher and Prelinger's study was Ames' (1966) study of the analysis of spontaneous stories told by 270 children, ages two to five, in their responses to "tell me a story." However, Ames' study was concerned with objective data to find out what themes or topics mainly concerned pre-school children, what kind of characters they liked to talk about, and how they viewed their parents.

Of the ten general characteristics in children's stories studied by Ames, the characteristics most related to this study were characters and length of stories. The results of Ames' study of characters in children's stories was that girls mentioned more girl than boy characters at ages two and three, but mentioned more boy characters than girl characters at every age thereafter. Boys showed a slight tendency to name a greater variety of animal characters than did girls.

Story Length. The next most important characteristic of Ames' study was length of stories. She found that stories told by girls became increasingly lengthy as age (two to five) increased. Girls' stories at each of these ages were longer than boys' stories. However, boys' stories increased steadily

in length except for a slight setback at four years through four and a half years of age; then boys' stories were somewhat shorter at age five than girls' stories. Children of both sexes stories increased with age through four and a half years.

In other studies, the results seemed to be inconclusive regarding story length for boys and girls. The results of studies of McCarthy (1930), Davis (1937), and Shire (1965) found that longer responses were made by girls, whereas Templin (1957) found no pattern of sex differences. O'Donnell, Griffin, and Norris (1967) reported that boys overall developed faster syntactic maturity than girls.

Ames concluded that two-year-old children were not ideal subjects for studies of children's stories because their language was meager, and their cooperation was questionable. Ames found that some mature two-year-old children did provide short stories which were characterized by rapid changes in characters, whereas the five-year-old children had difficulty telling stories, mainly because of their strong desire to tell familiar stories such as The Three Bears.

Pitcher and Prelinger (1963) found that the two-year-old children in their study were also quite shy and reluctant to tell a story. These children needed a warm-up period prior to their responses to "tell me a story," whereas the five-year-old children responded immediately, thereby contributing considerably more stories to be analyzed than did the two-year-old children.

When Ames compared the group of stories she collected with Pitcher and Prelinger's collection of stories of the same age

children, she found that there was marked similarity between her findings and conclusions and those of Pitcher and Prelinger.

In contrast to the dictated responses of young children in the Pitcher and Prelinger's (1963) and Ames' (1966) studies, Jones and Buttrey (1970) investigated children's (ages six to ten) written responses to stories after reading and listening to stories such as Beowolf, The Heroes, and The Ugly Duckling. These stories were selected because the characters seem to resemble children's personal dilemmas. It was found that children wrote about incidents that interested them from these selected stories.

Jones and Buttrey also found that children up to the age of four or five, like stories of their familiar environment and stories about animals, toys, pets, parents, and grandparents. Children also like stories in which other children would get angry, play, go shopping, and who would be fed, punished, loved, taken to places, and put to bed. It appears that children enjoy stories that open up their familiar world of experiences.

Narrative Conventions. Recent research on children's stories has demonstrated that narratives are highly structured by children who expect stories to contain structure. In 1976 Applebee conducted a reanalysis of Pitcher and Prelinger's collection of children's stories. His analysis focused on the extent to which the child adopted three simple narrative conventions when asked, "tell me a story." The three narrative conventions are consistent past tense, beginning with a formal

opening such as "Once upon a time..." and ending with a conventional closing such as "...happily ever after" or "The end." Applebee's results indicated that even two-year-old children make use of at least one of these three conventions; ages two to five, all three conventions show a steady rise; and by age five nearly 50 percent make use of all three conventions. He also found that there were no significant differences in the use of these conventions by boys and girls.

Other research studies that substantiated young children's use of narrative conventions were those of Cazden (1972), Sacks (1972), and Willy (1975). These authors found in separate studies that children's stories contain the following characteristics: 1) begin with a title or formal opening phrase such as "Once upon a time..."; 2) end with a formal closing such as "...happily ever after"; 3) use consistent past tense; 4) contain a change in pitch or tone of voice while story telling; and 5) accept make-believe characters and incidents.

Another study which investigated children's narrative conventions was that of Boyd and Mandler (1955) who analyzed stories written by children according to eight characteristics, one of which was formal features. These formal features were number of words used for formal beginning and endings to the stories such as the title and "The end." It was found that the effect of the occurrence of formal features in children's stories implied the need for children to make the stories acceptable and conform to the usual type of story to which they had been exposed.

When six-and nine-year-old children in Applebee's (1978) study were requested to discuss a story length, the most common mode of response which required the least reorganization of material was simply to retell the story complete with a title or formal opening or closing line and quoted dialogue. Applebee concluded that there were many other developments in children's stories as they progressed from ages two to five. The stories grew longer and more complex on any dimension of complexity. The characters, incidents, and settings became progressively removed from the child's personal experiences. Favorite characters from story books and television begin to dominate children's stories. These characters are given new but consistent roles in the child's own story telling.

Story Expectations About Characters. Children gradually develop firm expectations about story characters. The range of expectations about story characters extends into the everyday world with which the child is also familiar. In Piaget's terminology every new story derives its meaning from the way it is assimilated into a set of expectations about story characters and thus, accommodates itself to the unique characteristics of story. In other words, creation of and retelling stories involve the interrelated processes of assimilation and accommodation. As children create and retell stories based on their background of experiences, their understanding of story structure changes.

Piaget's (1974) two distinct, though interrelated processes of assimilation and accommodation are involved in any new experience. Children, ages four and five, assimilate (interact with the environment) the story with the past experiences of similar stories. Children provide themselves with expectations including characteristics such as characters, patterns of behavior, and suitable endings. On the other hand, their understanding of fairy tales is altered and expanded (accommodation) by the new characters and incidents encountered in fairy tales (Applebee, 1977, 1978).

In Applebee's investigation of various aspects of six- and nine-year-old children's story expectations of characters, he requested that children explain what certain story characters are usually like in a story. The results indicated that nine-year-old children had firmer expectations about behavior of characters in stories than did six-year-old children. It was found that 41 percent of the six-year-olds had firmly developed expectations about behavior of characters such as witches, fairies, lions, and wolves. These expectations increased to 86 percent of the nine-year-olds interviewed. Even at age six, 32 percent of the children expected a fairy to be good and 55 percent expected a witch to be bad. These expectations became firmer with age as children's experience with story increased.

Children's expectations are not limited to their expectations about story characters. These expectations extend to include their expectations about story structure. Guthrie

(1977) reported that the limited research conducted on understanding stories showed clearly that children expect a story to have a structure. In fact, children perceive a story in terms of its structure and remember it accordingly. As children mature and are exposed to more stories through experience with stories, their expectations become more differentiated and precise.

Guthrie maintained that the ability of even six-year-old children to search for and use abstract story structure as a basis for comprehension and memory should be recognized. The term abstract story structure is defined as those mental processes in the child which are no longer connected with the activity at the moment, but are concerned with finding an explanation, restructuring a story, discussing the order of events, or truth of a story (Piaget, 1974).

Applebee's (1978) study of the reanalysis of Pitcher and Prelinger's collection concentrated on children's stories as sources of information about their expectations about a story, how it is organized, and how it can be varied in response to different problems. He found evidence concerning how children develop expectations about types of actions and events in the story.

Story Expectations About Incidents. The incidents about which children develop expectations are considered important characteristics of story because these incidents usually relate to children's everyday world of experiences. Children in the preoperational period of cognitive development provide

detailed accounts of incidents in their stories. The elaboration of incidents usually lacks sense of structure or logical coherence. As a result children's representation in their stories are usually highly concrete and involve step-by-step mental pictures of these events. Furthermore, children's representations of incidents seem to heavily rely on close one-to-one correspondence between the representations and the original experience, with little or no evidence or reorganization of story structure (Flavell, 1963).

Characters are important components of story structure as they are related to the types and quantity of incidents in the story. Children create new characters with new incidents in their stories. As children mature, the number of characters and the number of incidents increase in their stories.

Sense of Story. Because research has suggested that children as young as two-years-old expect story to contain structure, there is evidence to suggest the possibility that to some degree sense of story is developed by the time the child is two and a half years old. Anthony Weir's monologues and the stories in the Pitcher and Prelinger collection provide evidence of the possible origin and early development of sense of story. The children in these studies used their language to discuss events of importance to them (Pitcher and Prelinger, 1963).

Applebee (1973) explains that sense of story is an urge and a need to impose structure on events and to make generalizations about the world. Sense of story is developmental

and can be inferred from the child's gradually increasing use of various narrative conventions of story. It is essential to the child's prediction in listening to and reading stories as well as creating and telling stories. Sense of story directs and guides the child's creation and retelling of story. It is viewed as a personal construct which develops and progresses toward an internalized representation of a child's thoughts. Applebee describes the internalized representation as an aid to comprehension in listening and reading which permits the child to make predictions about possible meaning. For example, as the child listens, sense of story helps the child in predicting what is likely to be said and how it might be said. As the child reads, sense of story helps the child in predicting what is likely to be said on the printed page and how it might be written depending on the kind of material being read.

Because sense of story is developmental, it will be influenced by age, experience with stories, and facility with language. Applebee (1978) believes that the extent of children's sense of story probably affects their comprehension and facility in reading and listening to stories as well as influencing their ability to create and tell stories.

In an exploratory study of eight children, ages six to ten, Brown (1977) found evidence in support of sense of story and how it affected children's listening to, reading, creating, and retelling stories. The children were requested to read a story orally and then retell a fairy tale. The results

demonstrated that children's sense of story was evident in their stories. Two of the children's sense of story was found to be immature as evidenced by their confusion of the sequence of events and their personal reactions to the story were garbled.

Based on subsequent data, including the completion of story excerpts, interviews, the retelling of the fairy tale, Goldilocks and The Three Bears, and the children's own dictated or written stories, Brown concluded that children's sense of story did, indeed, influence their comprehension. He found that the developmental stage of children's internalized representations of story may influence their ability to reconstruct the substance of the story either while actually reading or when retelling the story.

Results of Brown's (1977) study indicated that older children were able to recall more of the actions, reactions, and logical sequence of the previously read fairy tale, whereas the younger children were unaware that their stories had to follow a certain order. They could retell the story but not in the correct sequence. It appeared that sense of story may have been the causative factor which directed children to search for an appropriate logical order in their story.

Furthermore, Brown found that older children's sense of story is relatively mature. Past tense, formal beginnings, dialogues, story-like plot structures, causal relationships, and the sense of an ending were generally evident in older

children's stories. Children's ability to use story language which is a part of sense of story was especially evident in their stories. Brown concluded that children whose writing show few of the features of story language tend to have difficulty predicting syntactic structures in their reading.

Importance of Story Telling and Retelling. When children retell stories heard or read not only do they use the three formal conventions of story telling, but they also tend to tell stories complete with dialogue from the beginning to the end. The use of dialogue may increase children's involvement in the role of the story teller while they are engaged in dictating stories (Brown, 1977).

Story telling makes an important contribution to language development. Children who learn to use the language of the story also learn to retell the story in a comprehensible manner. The importance of story retelling, however, was recognized as early as the 1930's when Arthur Gates recommended story retelling as a reliable indication of children's readiness for reading. During the same period, Sir Frederick Bartlett (1932) demonstrated that story retelling was a way to reveal how people comprehend and remember text.

More recent studies, some based on Bartlett's early work, indicated that story retelling merits more extensive use in evaluating readiness, comprehension, and language growth (King, 1977). Pickett and Chase (1978) suggested story retelling as one of the approaches for evaluating children's language. This technique assesses children's

ability to comprehend, organize, and express their ideas.

The idea of story retelling as one approach for language evaluation was based on Pickett and Chase's (1978) study of story retelling with 36 kindergarten children. The story with pictures of the Ant and the Grasshopper was used. The story was told twice to the children who had to retell the events in sequence. One important finding was that the use of pictures seemed to enhance verbal learning for some while hindering it for others. Another important finding was that in one-third of the children's story retellings events were left out, the order was confused, or the children were unable to do the task at all.

Story telling and retelling may be a built-in opportunity for children to talk, think, and communicate with others (Bellon, 1975). When children are read a story appropriate for their age and then requested individually to retell it, the retelling can be recorded for future analysis in order to obtain information about the amount of story retold, the extent of understanding of story structure in respect to the sequence of events, characters, significant details, and the logic of the retelling in terms of the crucial events of the story (Brown, 1977; Guthrie, 1977).

Stories dictated by children may provide information about the quantity of language used (story length), the complexity of the language (number of words per main clause and subordinate clause or T-unit), and vocabulary diversity (number of different words). Recordings of children's

retellings of the same or similar stories at various time intervals may provide information about their developing understanding of stories and provide samples of their oral language growth (Bellon, 1975; King, 1977).

Children can retell stories based on their past experiences with stories, their age, and facility with language. Applebee (1978) explains that as children mature they do not pass out of one mode of response into another but integrate their older structures into a new and more systematic representation of experience. Thus, six-year-old children can retell stories, but they have yet to develop a stable system of categorization, and they have no way at all to formulate abstract statements about meaning or purpose.

How children respond to stories is determined by the mode of response, telling or retelling. Applebee (1973) pointed out the differences between the types of responses from children when they are requested to tell or retell a story. He presented several series of questions to children, ages six to nine. These questions focused on the subtle differences between telling and retelling stories. Children were asked, "What is Little Red Riding Hood about?" Their responses reflected the following age trends: Six-year-old children are much more likely to respond to the question with a simple attempt to retell the story complete with quoted dialogue, whereas the older children attempt to tell the story by summarizing it.

The three formal narrative conventions of story telling

were used to measure children's developing sense of story, yet these conventions also provided another way to measure the extent to which six- and nine-year-old children in Applebee's (1973) study could tell or retell stories. The children's responses were scored for the three conventions as well as for the presence of dialogue, story length, and linguistic complexity. The results indicated that younger children provided longer, less summary-oriented discussions. The request to "tell me about" seemed to predispose the children toward retelling, whereas asking "What is the story about?" led naturally to responses such as "It is about..." As a result retellings were longer and more consistently marked with the formal conventions of story than were summaries in telling about a story.

T-units. To examine linguistic complexity in children's stories, many studies have employed the T-unit as a reliable index of language growth and maturity. In 1965 Hunt established the T-unit as a more sensitive and objective measure than a sentence in describing the continuum of children's language growth in syntactic maturity. The sentence fluctuates widely depending upon the criterion used for punctuation. The T-unit was developed as a more reliable index of maturation in language than a sentence. Initially, T-units were named minimal terminal units since they were minimal as to length and each would be grammatically capable of beginning with a capital letter and terminated with punctuation marks.

Segmenting a passage into T-units means dividing it into

the shortest units which make sense. Any complex or simple sentence is one T-unit but any compound or compound complex sentence consists of two or more T-units (Hunt, 1965, 1970). For example, this excerpt from a child's story in this study contains twelve T-units, but only eight sentences: "Once there was a horse./ He wanted something to eat./ There was some hay out there where/ he was./ But the hay was his master's./ The master wouldn't let/ him eat it/ because there was a man in the house/ and the horse didn't know it./ The man had some money./ He bought some hay./ The horse ate the hay."

Hunt (1965) conducted a quantitative study to investigate grammatical structures and to search for development trends in the frequency of these structures written by fourth, eighth, and twelfth grade students. He found that the younger children did most of their writing in short T-units (1 to 8 T-units), while the older students did most of their writing in middle-length T-units (9 to 20 T-units) to long T-units (more than 20 T-units) per selection.

Applebee (1978) used T-units as one of the quantitative complexity measures in the analysis of young children's stories. Discussions of a favorite story and of a story well-known were divided into T-units. He found that T-unit length is directly related to linguistic complexity, that is, the longer the T-unit, the more complex the language is likely to be in transformational terms.

Linguists studying children's vocabulary have counted the total number of words spoken and the total number of different

words as language measures. Among the researchers who have found the T-unit to be a reliable index of language development are: Hunt (1965, 1970) who investigated grammatical structures written at three grade levels and the syntactic maturity in school children and adults; Loban (1963) who used the T-unit to quantify language samples he collected earlier; O'Donnell, Griffin, and Norris (1967) who investigated oral language and then compared it to written responses to the same stimulus; Bougere (1969) who investigated oral language factors and reading achievement of first grade children; and Fox (1970) who investigated syntactic maturity and vocabulary diversity in the oral language of kindergarten and primary school children.

A more recent study of Ciani (1976) describes the developmental trend of syntactic maturity and vocabulary diversity in the oral language of first, second, and third grade children. One of the measures used in analyzing the oral language samples was the T-unit length. Ciani found that an increase occurred over grades one through three on all the language measures, thus indicating a developmental trend. He concluded that between grades two and three a significant syntactic growth occurs as measured by the T-unit. However, no sex differences in the oral language development of these children were found. Ciani suggested that an investigation be undertaken with other children to study the syntactic maturity of both oral and written language as measured by the T-unit.

Story Complexity. Children's stories have been analyzed

for linguistic complexity which may be related to other complexity measures in stories. Children seem to handle the complexity in their stories by investing their own experiences in the stories they create. Complexity in most areas of cognition is handled by the imposition of story structure and stories are no exception (Applebee, 1973). One of the major kinds of complexities in a story evolves from the number of different things going on and the number of separate incidents. Children tend to use different incidents to structure their stories (Jones and Buttrey, 1970).

Applebee (1978) reported that the complexity of a task is in part a function of the number of elements such as characters, actions, settings, and themes which must be controlled and coordinated. He found that elements which go into a story tend to grow more complex with age on virtually any chosen complexity measure. The analysis of the Pitcher and Prelinger's stories by Applebee provided some evidence of complexity in children's stories. Included in the analysis were the scoring of the stories for the number of words, number of T-units, average number of words per T-unit, number of characters, and number of incidents. These complexity measures all showed a consistent and significant increase with age, whether considered individually or in a set.

Research evidence indicates that children's dictated or written stories and those stories they enjoy reading show a gradual increase in complexity as children mature. The gradual increase in complexity is obvious in such characteristics as

length of story, number of characters, number of incidents, and the extent to which the incidents are near or distant from the child's everyday world. The question of distance was perhaps the most interesting aspect of complexity studied by Applebee (1976) for it involved not only the characters and settings of stories, but also the extent to which children explored socially unacceptable areas of behavior.

Applebee's (1978) analysis of the conceptual organization of children's stories began with the investigation of examining ways in which children manage complexity in stories. Using a multivariate analysis of variance procedure, two important findings were noted. First, structurally more mature forms were prevalent in older children's stories, and second, stories told by older children were much more complex than stories told by younger children.

Children's Narratives. In the stories of the Pitcher and Prelinger collection, Applebee (1978) identified the following six basic types of structures which resemble Vygotsky's stages in concept development and share the same general order: 1) heaps, 2) sequences, 3) unfocused chains, 4) focused chains, 5) primitive narratives, and 6) narratives. Applebee concluded that there are real differences in the complexity of stories corresponding to the different methods of structuring the plots, differences which remain even after allowing for the fact that certain plot structures were used mostly by the older children in his sample.

The last plot structure, that of narrative, produced

significant changes in children's stories which reflected their changing expectations about what a story is. Applebee found that narratives (stories that have a consistent forward movement and climax to an end) are not productive forms and are the least developed area with two to five-year-old children. He did find, however, that the use of narrative form increased with age, from zero at age two to 20 percent at age five; it was a small increase, but Applebee considered it a major shift.

In addition, Applebee (1978) found that many of the children's stories did not systematically conform to one or another of the six basic types of structures. He acknowledged that more definable categories need to be distinguished by specifying more precisely the nature of the attributes for each narrative structure. Furthermore, any future analysis should begin by formulating the definitive differences between these plot structures.

Children's narratives were studied by Menig-Peterson and McCabe (1977) who presented an analysis of the structures of 1100 narratives gathered from 96 children (ages 3 1/2 to 9 1/2) as they engaged in conversations about events in which the children were personally involved. Two aspects of narratives were studied: 1) elements of narratives or telling what happened, and 2) how those elements were put together structurally. They found that nearly half of the children's narratives sentences were devoted to the first aspect of narrative which

was the recapitulation of events or telling what happened in the story.

Menig-Peterson and McCabe's results demonstrated that children of all ages are able to provide comprehensible, chronologically-ordered recapitulations of their experiences. All of the children provided extensive evaluation. However, there were no age differences in quality of evaluation provided but older children used a greater variety of types of evaluation. Although all children at all ages provided orientation to context, they did so increasingly with age.

These authors found that children, six years and older, increasingly group their orientation to context in the beginning of their stories which makes it functional for the listener. A story is more sensible when the reader knows the who, what, where, and when from the beginning of the story. Evaluation is significantly grouped at the end of the narratives by all children in the study. By age six, children showed structural differentiation in their placement of both orientation and evaluation.

Menig-Peterson and McCabe reported that there are two timelines involved in narratives. These timelines are first, the actual experience or the order of the events, and second, narration or the summary of the order of events. They examined this relationship between the two timelines for the three longest stories given by each child in the sample. They found that the incidents of classic narrative (events built up, then resolved) was quite low in the youngest group

of children. The incidence of classic narrative (a term created by Labov and Waletzky, 1967) increased with age and by age six it was the most common pattern in children's stories.

Besides the classic narrative, there were two other forms found in children's stories. One form was the more primitive form which was known as ending at a high point. This pattern was one of the two most frequent patterns produced by five-year-old children. The second form was the most primitive pattern which was most frequently produced by four-year-old children and it is known as leap-frogging, that is, jumping from one event to another but leaving out major events (Menig-Peterson and McCabe, 1977).

To summarize, the first characteristic studied was that of characters in children's stories. Several research studies have investigated the types of characters, inner complexity of characters, and identification of characters in children's stories. The results indicate that children seem to identify with characters which are familiar. The characters, however, reflect and represent children's internal complexity, and may be either people, animals, or objects. Children are somehow able to distinguish between real and unreal characters in their stories. Although many of the stories provided by children are not always true accounts of their experiences, these stories tend to be extensions of the children's themselves.

Research studies on children's stories have found

evidence that as children mature the complexity in their stories increases, and as their stories become more complex the number of characters also increases. As their expectations about how story characters behave increase and as children gain more experience with stories, their understanding of stories also increases.

The second characteristic was the length of children's stories. Conflicting evidence was reported related to age trends in story length. More studies need to be conducted with children of the same ages in order to verify these age and sex trends regarding story length.

Story length is related to linguistic complexity or language growth and maturity. As children mature, their stories gradually increase in length. However, children's maturity or lack of maturity may not be a causative factor of story length. Other intervening factors may influence the length of stories such as facility with language, age, experience with stories, and facility with story language. These factors may determine if children's stories increase in length as well as complexity. While some children are more verbal than others, there are those children whose writing abilities exceed other children's facility with language. When children are free to think and dictate their stories rather than think and write their stories, their stories become more detailed, thereby increasing in length. An interesting hypothesis would be to study if children at older ages are able to dictate or write longer stories.

The next characteristic of plot structures was incidents in children's stories. As children mature, their stories contain more characters, more incidents, more words, and increase in story complexity. Story length may be influenced by the number of different incidents and kinds of characters in the story. As children mature and gain more experience with story, incidents become more detailed and characters will contain more inner complexity.

The logical sequence of incidents in a story requires organization of story structure such as the sequence of the events, and what happens to whom, where does it happen, and what happens in the story. At a more complex level of story development, children develop expectations about the kinds of actions and incidents that occur in the story.

T-units and words per T-units are the fourth and fifth characteristics of plot structures. These two complexity measures are also related to linguistic complexity. Various researchers have established that the T-unit is a reliable index of maturation and is regarded as a more sensitive and objective measure of children's developmental growth in language than a sentence. These studies report that the T-unit is directly related to linguistic complexity. The longer the T-unit, the more complex the language.

As children mature, the number of incidents and characters in their stories increase in length. As their stories become increasingly longer, the number of T-units and words per T-unit also increase. Because of the increase in these

complexity measures, the assumption is that children's stories are linguistically and structurally complex.

The results of several investigations of children's stories provide evidence that children use conventional narrative forms to tell and retell stories. The implication from these results suggests that young children expect a story to contain structure. Stories provided by mature children tend to increase in length as the interaction of the characters becomes more complex and the number of detailed incidents increases.

Thus, as children mature and gain more experience with story, their emerging sense of story develops and influences their creation and retelling stories. Because sense of story is developmental and influences children differentially due to age, experience with stories, and facility with language, as they mature children tend to organize the structure of stories, while reading, listening to, and retelling stories.

The Communication Function of Oral Language in Children's Language Experience Stories

First grade children's language experience stories are deemed significant material for analysis. Gathering children's stories is one method of collecting materials for analysis and the stories provide tangible evidence of children's sense of story and egocentrism. This review of literature focuses on the communication function of oral language in children's stories which includes oral language development,

language experience story dictation, and children's editing while dictating stories.

Oral Language Development. The content of children's stories emerges from their oral language and background of experiences. When children dictate stories, these stories represent samples of the oral linguistic performance and underlying linguistic competence. Linguistic performance is the actual observed language behavior, whereas linguistic competence is hypothesized judgments and knowledge that underlie the observed performance (Hall and Ramig, 1978). Children's oral language reflects their experiences, language and thoughts. The language of the child is influenced by and influences cognitive development. Children's language and thoughts are interrelated processes and their stories reflect this interrelatedness.

Oral language development in language experience research has been investigated by Stauffer and Pikulski (1974). These authors analyzed samples of oral language on the basis of materials obtained in the notebooks of 50 first grade children who were taught to read by means of LEA. A comparison was made of children's dictated language samples between September and January, and those stories dictated between February and early June. This data provided a means of measuring the growth change in oral language of first grade children. It was found that following the analysis of children's stories, significant improvement was found among all dimensions of oral language usage being evaluated.

Stories individually dictated by children to someone who records these stories provide the basis for obtaining a sample of their oral language. In transcribing and reproducing children's written responses, Jones and Buttrey's (1970) language samples remained close to what the children said and wrote. The exceptions were in the children's spelling which had been standardized and in their sentences which were punctuated to help the reader.

The use of children's oral language as the content of reading material has been established from previous investigations in reading research and from people who have written extensively on the value of language experience reading (Ashton-Warner, 1963; Lee and Allen, 1963; Stauffer, 1970, 1976; Allen, 1976; Hall, 1976, 1978). The theoretical basis of children's oral language in language experience reading was described by Zirbes (1951) who reported that the functional relationship between direct experience, spontaneous oral language which deals with direct experience, and the recording of such spontaneous oral language is important. This relationship is viewed as the sequence of meaningful relationships which guides children and helps them to develop a personal identification with the experience. The functional relationships consist of the children's use of language as expressed in speech, heard and used in group conversation, recorded, seen, read, and communicated.

Oral language is a meaningful component in the language experience approach. Henderson (1973) defines LEA as a

pedagogical term which implies that reading competence advances as the child's internalized language experience evolves into an increasingly complex and functionally adequate structure in thinking. Consequently, LEA may be classified under the theoretical framework of cognition since the approach uses the child's language, experiences, and thoughts as content of the reading material. Hall (1978) defines LEA as a method of instruction built upon using reading materials created by writing children's spoken language. Language experience story dictation and oral language are essential components of LEA.

Language Experience Story Dictation. Dictating is one of the most common activities in LEA. After a period of discussion of the child's ideas, the child's story is dictated to someone who writes what is said. A child's picture or painting often serves as a stimulus for the creation of story (Madison, 1971).

Jones and Buttrey (1970) analyzed children's written responses in terms of three methods: first, the medium of responses involves body activity, free play, writing, drawing, and painting; second, the content of responses consists of recall and reflecting on new experiences of interest; and finally, the quality of responses includes spontaneity, identification with story, complexity, and level of organization involved in making the responses. As the story is dictated, children view the written form of their language and gradually understand that the print is a written record of their language.

Allen (1970) explains that the thinking of each child is valued and important. Valuing children's language can lead to oral expression of their thoughts as represented in the written form. Recording and transcribing the content of children's oral language is necessary to bridge the gap from oral to written communication.

Children's dictated stories expressed in the written form convey meaning just as their oral language conveys meaning. Their language becomes the content of the written material. The meaning of children's oral language is communicated through their choice of words and sentence structure which reflects their facility with language (Stauffer, 1970; Anastasiow, 1979).

Willy (1975) performed a quantitative analysis of 145 written and oral stories of six-year-old beginning readers. Written stories were composed individually by the children. Orally composed stories were transcribed on a typewriter as the children dictated them. The children were aware that their stories were, in a sense, being written for them rather than simply heard. Willy found that six-year-old children, in an unstructured classroom, almost always choose to invent their stories orally and extemporaneously because they are free to think about how to begin the story, who should be in it, what happens next, and how the story should end. Children are also free to repeat phrases in their stories and make them longer if they wish. Applebee (1973) concluded that when children think rather than write about stories, their stories are often more detailed.

In 1977 Brown conducted a study with a small sample of six-to ten-year-old children. In this exploratory study, the children were asked to read a fairy tale orally and then retell it. Brown's study was concerned with children's sequential recall of events in the story. The children were engaged in writing and dictating their stories.

To summarize, language experience story dictating is one way to elicit children's oral language to be represented in the written form. Children do think and when asked to "tell me a story," their stories become the reflection of their oral language, thoughts, and experiences. Their language is viewed as the content of their reading material. As stories are dictated and written in the child's presence, the child gradually understands that what is said can be represented by written symbols.

Children's Editing While Dictating. Children's editing, revising, reformulating, or reorganizing their dictated language experience stories may provide clues to how they view the written form of their language. As children view the written form of their language, they may edit more than if they simply dictated the story without it being written. On the other hand, some children may not edit their dictation because they may not fully understand the relationship between what they dictate and what is written for them.

As children understand the purposes of the written and spoken languages, they gradually understand that the language which represents their language is more meaningful to them

than grammatical structures that are unlike their language (Stauffer, 1976; Allen, 1976, Hall, 1976; Kirkland, 1978). As children mature, they understand the relationship between their spoken and written language systems.

Martellock's (1971) study describes the grammatical and semantic operations of proficient middle grade readers who were asked to use the information gathered from reading to retell a story in their own words and write a synopsis of the story. It was hypothesized that children would produce fewer miscues in reading stories written by themselves than when reading unfamiliar materials. The hypothesis was not supported. It was found that children made more miscues on their experience stories because they had attempted to expand and change what they had written. Willy (1975) explains that children invent their stories with apparent reserve, adding to, omitting, combining, inventing, reordering, and disordering plots, and themes whenever they wish to.

Martellock pointed out that it would be interesting to find out if the children who had previously been given an opportunity to edit their material would produce fewer miscues while orally reading their language experience stories. It might be assumed that the revised manuscript may be read with fewer miscues. On the other hand, it is possible that the revising and editing would continue in the reading.

In summary, writing what children say is one means of eliciting samples of oral language as reflected in their language experience stories. When children view the written

form of their language, they gradually understand the relationship between oral and written language systems. As children mature they seem to understand their own language systems much better than unfamiliar language systems.

Jean Piaget's Theory of Thought and Language

The review of the literature and research on Jean Piaget's theory of thought and language will be presented as follows:

- 1) thought and language of the child: which comes first?;
- 2) the egocentric child during the preoperational period of cognitive development; and 3) Piaget's decreasingly egocentric speech features.

Thought and Language of the Child: Which Comes First?

There has been a controversial debate for many years concerning the relationship between thought and language. The controversial debate has been centered around the question of "Which comes first, the thought or the language?" Sometimes the relationship between thought and language is judged as being the same, whereas at other times the relationship is viewed as being separate. Until recently many theories of cognitive development have considered thought and language as an interaction with the other (Voyat, 1972). The major area of agreement, however, is that both are important in the overall development of the child.

Two opposing advocates of the debate since it began are Piaget and Vygotsky. Piaget (1928, 1972) defines thought as

the result of internalized actions which are dependent upon the level of development of the child's nonverbal and perceptual abilities. Piaget's basic premise is that language is not the source of logic, rather it is structured or formed by logic.

One advocate who is supportive of Piaget's views on thought and language is Penrose (1979) who maintains that thinking is largely spontaneous and involuntary. Thinking begins before a child can speak and is not limited by language. Although language is the usual stimulus for challenging the child to think and explore, a child's ability to think is frequently ahead of the ability to use language. In other words, a six-year-old child knows far more than can be put in words (Penrose, 1979; Bellon, 1975).

Piaget and other advocates believe that thinking begins before a child can speak. It has been proposed that there are two basic concepts related to the child's thinking. First, the sources of the child's intellectual operations are not found in language but in the sensorimotor development period (6-18 months). This period is the earliest stage of cognitive development because the earliest signs of intelligence appear during sensory perceptions and physical activities. Piaget maintains that the child's knowledge has its beginnings in the sensorimotor activities and its logical organization is not derived from language but from intelligence (Piaget, 1928; Pulaski, 1971; Sinclair-de-Zwart, 1971).

Second, the formation of representational thought or

symbolic functioning of language is analogous with the acquisition of language. The development of the symbolic functioning during the early preoperational period is important for reading. The ability to distinguish a signifier from that which is signified (to let something stand for or represent something else while differentiating between the two) is essential for reading. For example, a child who cannot grasp that the squiggles on the paper represent words and meaning simply will not read in the sense that reading implies comprehension. The symbolic functioning, for instance, permits the word cat, the sound meow, or a toy stuffed cat, all to stand for or represent the real object which might not be present in the immediate environment (Luria, 1975; Sinclair-de-Zwart, 1976).

Piaget (1973) makes a distinction between thought and intelligence. Intelligence is a way to solve a new problem or find a way to reach a certain goal. Thought is an interiorized or internalized intelligence which is no longer based on direct action but on symbolisms of speech, mental pictures or images, and gestures. These symbolisms make it possible to represent what the sensorimotor intelligence grasps directly.

Piaget believes that speech is closely bound with thought and it is a system of internalized actions that later become a system of operations. In order for these internalized actions to form thought, these actions must be performed physically in sensorimotor activities first. Children need a long period

of pure practice and action to formulate the substructure of speech which is to develop later. Penrose (1979) claims that all thinking results from the coordination of external actions. Children think as they see relationships between actions which are exerted upon them and their world.

To think a child must be active, not passive. In one of Piaget's early writings, The Language and Thought of the Child (1955, reprinted 1974), the development of thought in the listener and the speaker interactions among children was studied. Piaget defined the relationship of language to thought as a source of symbolic functioning.

Various studies have been conducted on thought and language relationship. One of these studies by Sinclair-de-Zwart in collaboration with Inhelder (1969) involved the areas of conservation, no conservation, and transitional conservation. The results supported Piaget's views on the role of language in the constitution of intellectual operations. It was concluded that language is not the source of logic, but on the contrary, language is structured by logic.

Voyat's (1972) research has led to similar conclusions. His research with 75 Sioux children (ages four to ten) dealt with their cognitive development and language. In examining the relationship between language and thought, he found that although language played a role in thought the basic process of thought seem to be a function of an active organizational mechanism, deriving actions children bring to their experiences.

To summarize, two of Piaget's important contributions to

the study of thought and language processes are noted here. First, he has shown that cognitive structures develop early and in specific stages and ages in children. Second, he has explored through experiments that cognitive processes are derived from intellectual operations and not found solely in the acquisition of language. Although Piaget does not altogether negate the role of language in thought, he does believe that language plays a limited but not negligible role in the formation of child logic. Consequently, language does not fully shape the child's mental activities.

The advocate of the opposing side of the controversial debate of thought and language is Vygotsky (1962) who believes that it is virtually impossible for the child to abstract all the concepts that are coded by language. Thought and language have different beginnings and roots and develop and operate independently along two different continuums. He believes that the lines of speech meet when the child discovers the symbolic functions of words. Halliday (1975) also believes that as soon as there are meaningful expressions in the form of words, there is language. Language is so important in most thinking that it may be considered apart from other symbols involved in thinking. Language is viewed as an important factor apart from thinking in cognitive development (Russell, 1965; Sinclair-de-Zwart, 1976).

The Egocentric Child During the Preoperational Period of Cognitive Development. Children in the preoperational

period of cognitive development are believed to be egocentric (Piaget, 1974). Piaget's belief that children are egocentric is an essential component of his theory of cognitive development and is derived from his investigations of children's use of language, the systematic and careful observations of his own three children, and other small samples of children. His investigations led him to conclude that conversations of six-year-old children could be classified into two distinct groups: egocentric and socialized speech.

The major difference between the two groups of speech is in their functions. Egocentric speech is the result of the child not bothering to know to whom he is speaking nor whether he is being listened to. The child talks either for himself or for the pleasure of associating anyone who happens to be there as his audience. The child's talk is egocentric, partly because he does not attempt to place himself at the point of view of the person listening to him (Piaget, 1974).

In socialized speech, Piaget (1974) believes that the child does communicate and consider the listener's point of view. The child actually exchanges thoughts with others, either by telling the listener something that is interesting or something that will influence the listener's actions or behavior in some way.

Piaget subdivided the preoperational period of cognitive development into two stages: 1) preconceptual (ages 2-4) and 2) intuitive (ages 4-7). In the preconceptual stage, a rapid growth of language takes place for most children and it seems

logical to classroom teachers and reading specialists that reading instruction should accompany this growth of language development. Nevertheless, thought processes in the two to four-year-old child are not sufficiently stable to permit the child to profit much from practice on conceptual skills because every event is new to the child. The child neither thinks deductively nor inductively but transductively which means from specific to specific events. The child makes little or no differentiation concerning the degree of relevance between these events. Nothing is specifically related; the child's thought processes simply do not appear sufficiently stable to guarantee anything but frustration for those who would attempt formal reading instruction during the preconceptual stage. There are exceptions, of course, because some two to four-year-old children do learn to read.

The second stage of the preoperational period is the intuitive stage. By intuitive thought, Piaget meant thought not yet freed from perception and egocentricity. One aspect of a situation is focused upon and others ignored. The child only grasps one relation at a time. During this stage most children experience beginning reading instruction. The cognitive benchmark of conservation is the realization that substantial change may take place in an object without changing the appearance of the object. Development of overall understanding of conservation of elements at approximately age seven denotes a major change in the thought processes of children as they move from near-total dependence on perception

to a greater reliance on thought to check what is seen.

Near-total dependence on perception of the immediate environment is typical of nonconserving, egocentric children. Their perceptions are centered on one specific dimension of an object rather than integrating their perception as a whole. Preoperational children are influenced by perceptual features of objects and their perception is immediate, egocentric, and limited to what is happening at the present time (Piaget, 1972, 1974; Sheppard, 1978).

Conservation and the Egocentric Child. Piaget (1972) hypothesized that since the child is egocentric, the child does not possess the cognitive ability to conserve. Conservation is the ability to realize that certain attributes of an object do not change despite transformations through manipulation. In conservation experiments with young children, Piaget formulated three distinct stages of cognition as these stages evolved from early childhood through adolescence. These stages are no conservation, transitional conservation, and conservation.

In the first stage of no conservation, the child does not recognize that two amounts such as liquid quantity, substance, weight, or volume are equal despite transformations. In stage two, transitional conservation, the child vacillates in the response to the conservation problem. The child does not concentrate exclusively on the height of a glass of liquid, but occasionally bases personal judgments on the width of a

glass of liquid as well. The third stage, conservation involves the child's ability to conserve and to realize that two amounts are equal despite transformations (Ginsburg and Oppenheimer, 1969).

Piaget and others (Murray, 1971; Sheppard, 1978, Kirkland, 1978) have conducted many experiments in conservation to verify the stages in cognition. One of Piaget's most famous duplicated experiments in conservation is performed with two equal size balls of clay. After a child agrees that both balls are equal in size, one of the balls of clay is rolled out into the shape of a hot dog. The child is asked, "Which one has more clay?" The young child under age seven usually says that the hot dog has more clay because it is longer or thinner. A common feature of preoperational, nonconserving children is their belief in the correctness of their errors. They are quite resistant to outside pressures, especially from adults who may seek to change their responses.

In a study by Penrose (1979) children, ages six to seven, were requested to judge whether objects changed in amount when changed in appearance. For example, children were asked if six chips placed closely together in a row were the same as six chips spread apart, or whether an amount of water in a flat dish was equal to the same amount of water in a glass. The results of many experiments of this kind revealed that before the age of six or seven, most children consider a quantity changed in amount when it is changed in appearance.

Of the abilities which contribute to the development of

conservation, reversibility and centration appear to have substantial importance for young children. Reversibility permits the child to conserve by thinking (in the case of substance), "If I make the hot dog back into a ball, then it will be the same as before"; or "If I poured the water in the flat dish back into the glass, then it will be the same as before." The child can solve many other problems by undoing some operations in thinking and coming back to the starting point. Reversibility is a mental operation which the preoperational, nonconserving child usually cannot perform. Reversibility to Piaget is the most important characteristic of concrete operations as it is the beginning of genuine thought (Sheppard, 1978).

On the other hand, centration is a tendency to concentrate on the initial and final states of a given situation and to neglect the intervening events which are responsible for the changes. For example, the child is presented two rows of six chips. One row of chips is spread apart. When asked, "Are there as many chips in this row as in that row, or does one have more?" (Goldschmid and Bentler, 1968). The nonconserving child will usually say that the chips that are spread apart have more. The child has centered on the length of the row of chips and ignored a number of other factors. The child has failed to decenter and to consider the density of rows as well as their lengths, and has ignored the intermediary transformation (the spreading of the chips). Thus,

the child focuses mainly on the initial and final states and fails to integrate the transformation.

There are three major differences between nonconserving and conserving children with regard to conservation. Waller (1977) reported the differences as the following: First, the nonconserving child centers on a dominant aspect of the situation, attending to and ignoring information perceived. For example, the child focuses on the shape of the clay ball and ignores the transformation, that is, the change from one state to the other. The conserving child decenters and takes into account the situation and simultaneously coordinates several dimensions in a situation. Second, the nonconserving child is more concerned with a fixed or static function of objects and perceives immediately what is before him, whereas the conserving child is concerned with the transformational nature of things. The conserving child can think about change in objects and the operation which led to change. Finally, the nonconserving child does not possess reversibility, that is, the ability to reverse or undo operations mentally, whereas the conserving child possesses true reversibility.

The conserving child knows that the acts of transformation can be undone mentally to reproduce the original state. These are mental changes which underlie the performance changes on tasks such as conservation, reversibility, and decentration. The conserving child can perform a mental operation which leads to certain conclusions. The child can hold a basic idea in mind, manipulate and expand it in various ways (Waller, 1977).

On the other hand, the nonconserving child has difficulty handling transformations in situations which are immediately perceived by the child. The child does not take into account and simultaneously coordinate several dimensions in a situation due to egocentrism which is transmitted into the child's communication behavior. Piaget (1974) believes that nonconserving children are capable of little communication behavior other than egocentric speech patterning.

One of Piaget's studies was designed to measure the amount of communication behavior in young children. The experimenter would tell a story to a six-year-old child. The child (explainer) was instructed to relate the story to another child (listener). When the explainer confused and garbled the story, Piaget concluded that six-year-old children tend not to communicate effectively mainly because they are egocentric and fail to take account of the listener's point of view (Piaget, 1974; Willy, 1975).

The Decline of Egocentrism. Since thought processes do not change in preoperation children, except in their symbolic representation and interpretation, what happens to egocentrism? Piaget and others believe that egocentrism just doesn't go away by some mystical force. Egocentrism gradually decreases as children are influenced by social pressures from their peers. It is not until children are approximately six or seven that their thoughts and those of their peers clearly conflict; it is at this time that children begin to consider the other person's point of view (Piaget, 1974; Wadsworth, 1979).

Once children consider the other person's point of view, egocentric thought yields to social pressure as children seek the opinions and thoughts of others to verify their own thoughts. Peer groups, social interaction, and the repeated conflict of children's own thoughts with those of others eventually cause children to question their thoughts and seek verification. Peer group with social interaction is the primary factor that acts to resolve children's egocentrism (Piaget, 1974; Wadsworth, 1971; Kirkland, 1978).

Because egocentric children really believe that another person's thoughts are the same as theirs, they never question their own thoughts. Consequently, their thoughts are the only ones that really matter and their thoughts must be correct and logical (Kirkland, 1978).

Several studies were conducted to test the effects of egocentrism and social pressure from peers. One of these studies was performed by Murray (1971). This study involved the effects of training in the conservation principle upon preoperational children. The small group instructional model was used for training in the conservation principle and the effects upon the increase in children's socialized behavior based on social pressure were tested. Once the conservers and nonconservers among kindergarten children were identified, Murray placed each nonconservers in a group with two conservers and instructed them to solve conservation problems. The children argued, persuaded, and tried to reason with each other as to a feasible solution. Finally,

they agreed. On posttest results, the nonconservers had changed significantly and positively toward the correct conservation response. The study was replicated with another sample with the same results.

Piaget's Decreasingly Egocentric Speech Features. Piaget attempted to trace most of the characteristics of the child's thinking to egocentrism. The absence of the relations of causality, logical justification, and sequence from a compact group which defines the thinking of the child and thus, explains egocentrism. The child's egocentrism has a considerable effect upon the structure of thought. The main link which binds the specific characteristics of child logic is the egocentrism of the child's thinking. Since Piaget was the first to investigate the child's perception and logic in a systematic manner, his efforts were centered on certain distinctive characteristics of child thought. Because egocentrism is the main link in the child's thinking, Piaget related other traits found in his studies, including realism, syncretism, difficulty in understanding the relations of causality, and logical justification to egocentrism (Piaget, 1972).

Piaget found the following types of relations in children's spontaneous speech: First, the relation of cause and effect or the causal relation of causality, and second, the relation of reason and consequence or the logical relation of logical justification. Causality and logical justification are noted by the frequency of the word 'because'. Piaget also examined the narration of causal sequences. He found

that in such narration the preoperational child is incapable of differentiating clearly between these relations. The child follows neither the order of logical demonstration nor that of causal sequence, but confuses one with the other. The structure of the explanations which takes place between the explainer and listener confirms Piaget's hypothesis that egocentric children cannot differentiate clearly between these relations (Piaget, 1972).

To investigate the two main conjunctions of relations, Piaget devised two experiments to determine the absolute frequency of the word 'because' in children's spontaneous speech. In one experiment, Piaget analyzed children's oral language as they expressed the word 'because' in their spontaneous speech. He postulated that the frequency of 'because' occurs in a smaller proportion in spontaneous speech than when children are forced to complete sentences containing the word 'because' as a relation.

Piaget (1972) formulated three hypothesis related to the conjunctions of relations of causality, logical justification, and sequence. The first hypothesis was that the number of appearances of 'because' increases with age and even more so at age seven. The second hypothesis was that the 'because' increases in number with the socialization of the child's thoughts. The third hypothesis was that the nature of juxtaposition can be explained as the unconscious absence of direction in thought. As a result of his experiments, he postulated that if juxtaposition was defined as the lack of

explicit relations between two ideas or events, then it could be assumed that juxtaposition was present in children's speech up to the ages of seven to eight.

The results of Piaget's quantitative analysis of the empirical 'because' provided evidence which suggests two things: first, the phenomenon of juxtaposition declines about the age of seven or eight; and second, the child before reaching the age of seven or eight tends to confuse logical and causal relations. Thus, Piaget assumed that juxtaposition declines as the child emerges from egocentrism.

The results from Piaget's (1972) studies on egocentrism of child thought indicated that with children, ages five to seven, 44 to 47 percent of their spontaneous remarks were still egocentric. Between the ages of three to five, the proportions were 54 to 60 percent. The chief function of egocentric language is to serve as a parallel function to thought or action of the child.

The results of Piaget's (1972) second study revealed that even in socialized portion of childish language, conservation passed through a certain number of primitive stages before becoming a genuine interchange of ideas. Piaget found that not until seven or eight does argument in particular become what it is for the adult, namely the exchange from one point of view to the other.

Around the ages of seven to eight, when children are asked to complete sentences which imply a definite relation, there is

a certain amount of confusion between the various possible relations. The relation is not implicit or explicit in the child's mind, rather that the child is incapable of establishing the correct relations. The scarcity of the word 'because' up until the ages of seven to eight has been empirically proven by Piaget (1972) who reported that the child's mind is devoid of certain relations.

The term decreasingly egocentric speech features is a term created by the investigator of the present study. This term represents the relations of causality, logical justification, and sequence. The absence of these features in children's oral language as reflected in their stories may provide clues to their egocentrism. The absence of these features also implies children's immaturity.

Causality. Causality or causal 'because' is the relation of cause and effect of explicit events and involves explanation. Piaget believes that the thinking of the preoperational child is not based on logic but on objects and events that occur together and are assumed to have a causal relationship. In Piaget's (1972) study of verbal communication, he found that young children rarely express correct causal relations. The children were instructed to complete two sentences "I shan't go to school tomorrow, because..." and "That man fell off his bicycle, because..." These sentences require causal relations because it is a matter of connecting an explicit event with another event.

Piaget's results of thousands of collective inquiry

experiments with 180 children, ages seven to nine, indicated that the first sentence was successfully written by 85 percent of seven-year-old boys and by 95 percent of boys between eight and nine. The preceding second sentence was unsuccessfully completed at age seven (70%) but was completed successfully with children of eight (77%). It may be assumed that on an average, the correct use of the empirical 'because' begins at about the ages of seven to eight (Piaget, 1972).

Piaget's study of children's written responses to two sentences expressing causality and Ames' (1966) study of children's spontaneous responses to stories both have investigated causality to some degree. Causality was one of the characteristics of children's stories in Ames' study. She analyzed spontaneous stories told by 270 children, ages two to five, and believed that children's stories provide good material for studying their expression of the idea of causality as it develops. She found that with increasing age more children express some idea of causality and that there are more sentences in which causality is implied or explicitly expressed.

There were significant age trends in Ames' study. She found that the proportion of children whose stories contain any kind of expression of causality increases substantially with age from eight out of 30 children at two years of age to 32 out of 40 at five years of age. At the same time she found a shift toward more explicit information of causality as children increase in age which means that a smaller percentage

of older children simply prefer to use expressions such as 'because', 'and', and 'if' to bind their stories.

Applebee (1973), however, examined causality in children's stories in a different way. His investigation was concerned with the amount of complexity in children's stories. Complexity in most areas of cognition is handled by the imposition of story structure. One of the major kinds of complexity in a story evolves from the number of different things going on and the number of separate incidents. Applebee believes that one way to reduce this kind of complexity is by the introduction of causality. With the introduction of causality, two or more separate incidents can become a single set of things that stem from one another or things in response to one another. Causality becomes the link in reducing complexity in stories.

The results of Applebee's study provided some evidence that the majority of stories at age two show no causal relations; at age three most stories show some causality; at age four there is an increase in proportion of fully structured stories; and at age five causality is completely dominant in children's stories. More investigations of this nature are needed in order to verify his findings of age trends with causality in children's stories.

Applebee's (1973) analysis was concerned with the degree to which the incidents in stories are causally linked. In Ames' study, the stories were analyzed and scored for the kinds of structure rather than whether or not the story as a whole contains structure. Ames' study used the following

different kinds of connecting words to determine the presence and extent of causality in children's stories: 'and', 'because' (implied), 'cause', 'because', 'if', 'when', 'then', 'so', and 'so that'.

Although these connecting words denote a relationship of either causality or logical justification, Piaget (1972) pointed out that the conjunction 'and then' does not denote a relationship of either causal or logical relations. It indicates no relation which the child could use in order to connect the propositions for the purpose of a clear explanation or demonstration. The term simply means a personal connection between ideas and events as the ideas enter the mind of the child.

Researchers investigating causality in children's stories (Piaget 1972; Ames, 1966; Applebee, 1973) have concluded that as children increase in age, they seem to express some idea of causality in the process of maturational development. The results indicate that older children tend to use causality as one way to structure their stories.

Logical Justification. The logical 'because' is the second conjunction of relations and it denotes a relation, not of cause and effect, but of implicit ideas of reason and consequences. Logical justification also involves demonstration of ideas. According to Piaget (1972) the need for checking and demonstration is not a spontaneous growth in the life of the child; it is a social product. Demonstration is the outcome of argument and the desire to convince others. Preoperational children usually cannot reconstruct their own reasoning

or justify their arguments because they cannot think about reasoning and arguments from another person's point of view. Instead, they assume that everyone shares their thoughts and feelings. As a result they do not have to justify or explain themselves to others.

Piaget (1972) believes that the logical reasons given by the child of seven or eight are incomplete because the child does not deal with logical justification. This does not mean that the child lacks the information or knowledge; rather, it is due to the child's egocentrism that the need for logical justification is not recognized. Egocentric children believe they are in complete accord with and understood by others. Even when they have reasoned correctly, they cannot justify their reasoning because they are in the habit of taking the main point for granted.

To verify the use of logical relations which develops in children after the age of seven or eight, Piaget devised an experiment to test his hypothesis. He experimented with the same 180 children and provided them with the following two sentences to complete: "Paul says he saw a little cat swallowing a big dog. His friend says that it is impossible (or silly) because...", and "Half 9 is not 4 because...."

As a result of these experiments Piaget has substantiated the hypothesis that children experience difficulty in establishing correct logical relations. In order for the child to explain why half 9 is not 4, the child must appeal to definitions and relations which are not causes, but logical relations, whereas to explain a bicycle accident ("The man fell off the

bicycle because...") there is really no need to appeal to anything beyond facts. These two explanations, causal and logical, differ at this point.

The results of Piaget's (1972) study of these relations showed that logical justification appears at a much later date than causal explanation. When the child is asked to complete the sentence, "The man fell off the bicycle because..." the children experiences little or no difficulty because the sentence requires a causal explanation. On the other hand, when the child is asked to complete the sentence, "Half 9 is not 4 because..." the statement may seem to be absurd to the child. The child, therefore, attempts a causal explanation as an answer: "...because he can't count." Based on the universal law of mental development, the desire to verify results comes much later in time than the ability to invent explanations according to Piaget (1972).

The results of this experiment with logical relations indicate that logical justification is more difficult than causal relations. It was found that logical justification was present more in boys' sentence one at ages eight and nine than in girls' sentence one at the same age. At age seven neither boys nor girls expressed high percentages of correct implicit logical justification in either sentence. Although boys at all ages had higher percentage of logical relations in sentence two than girls, neither boys nor girls had more than 75 percent on sentence two (Piaget, 1972).

Piaget concluded that the desire for logical justification

remains at an elementary stage of development until around seven or eight. Children simply juxtaposed their statements rather than make them imply one another in such a way as to make logical deduction possible. The need for logical justification is concomitant with the decline of egocentrism. In other words, the decline of egocentrism, that of juxtaposition in general, and the development of logical justification develop simultaneously (Piaget, 1972).

Sequence. Since Piaget hypothesized that children are egocentric, they are not really aware of the necessity of arranging their sentences in any particular order. Piaget (1951) believes that egocentrism helps to make children unconscious and unaware of the phenomena of the external world. Thus, children may omit significant parts of a story even though they understand and remember these parts. They fail to mention these parts because they assume the listener already knows parts of the explanation or story.

A child knows quite well the order of the events of a story, but attaches no importance to this order. Consequently, a child gives significance to the events of the story rather than to the order of these events (Piaget, 1972). Substantiating evidence was found in Brown's (1977) exploratory study with children, ages six to ten, which shows that younger children's stories are not told in the correct sequence.

However, Menig-Peterson and McCabe's (1977) analysis of children's narratives found that children (ages 3 1/2 to 9 1/2) are able to provide comprehensible, chronologically-ordered

accounts of their experiences. Ames' (1966) and Applebee's (1973) results suggest that one aspect of children's ability to structure more complex stories is the extent to which incidents show a clear sequence in time.

Children who tell stories and do not make use of an integrated wholeness but do relate events one after the other in the stories, are juxtaposing the sequential structure of the story. The logical sequence of events is denoted by incidents that share a common similarity or attribute. In order for stories to have logical sequence, they can grow longer, but cannot develop in new directions (Vygotsky, 1962; Brown, 1977).

When children's explanation contain the absence of order of events and causal relations are rarely expressed, there is juxtaposition of events. Preoperational children do not seem to be concerned with the how of the events which are presented and they provide insufficient reasons for those events. Emphasis is placed on the events rather than on the order or the cause which binds the events (Piaget, 1974).

As far as children are concerned, the order of the events are well-known, however, no importance is attached to this order in the explanation. As a result egocentric children tend to speak more to themselves than to the listener because they are not accustomed to expressing their thoughts socially. According to Piaget (1974) the capacity for arranging a story in a definite order is acquired between the ages of seven and eight.

The Relationship Between Juxtaposition and Egocentrism.

Egocentrism entails a certain lack of unconscious direction in thinking which is closer to simple motor tendencies than to willed conscious direction. Piaget (1972) vividly describes the relationship between juxtaposition and egocentrism as nothing in egocentrism which tends to make thought conscious of itself. Juxtaposition is the result of absence of direction in successive ideas and images. This absence of direction is itself the outcome of that lack of self-consciousness which characterizes egocentric thought.

One phenomenon which explains egocentric thought is juxtaposition. The incapacity of the child to make a coherent whole out of an explanation and the tendency to break up the whole into a series of fragmentary and incoherent statements are the results of juxtaposition. The statements are juxtaposed to the extent that there exists neither causal nor logical relations. These statements lack something more than just sequence, but lack any sort of expression denoting a relation. These successive statements are usually denoted by the word 'and'. In the child's mind 'and' probably answers to a certain relation which may be expressed by 'this goes with this' and which may take on several meanings, one of which could be causality (Piaget, 1972).

In conclusion, the analysis of juxtaposition is usually easy to detect in the child's explanation or story. When it is apparent that there is no wholeness, no synthesis in the story, it is also apparent that only a series of juxtaposed

statements exists. The word 'because' is not found in the story nor is there a single explicit causal or logical relation. Everything is expressed factually and unconsciously. Consequently, there is a definite case of juxtaposition when there is absence of causality, logical justification, and sequence in the child's story or explanation. Juxtaposition diminishes as the child emerges from egocentrism.

Summary

To summarize, this review of literature and research for this study indicate that as children mature, the complexity of their language increases in their stories. It is assumed that as children grow, mature, gain experience with stories, and acquire facility with language, many things happen to the stories they create and tell. As the number of words increases, complexity of language also increases since story length is related to complexity of language. As the number of T-units and the number of words per T-unit increase, the more complex the language. As the number of characters increases, the interaction among the characters becomes more evident. As the number of incidents increases, the story becomes more complex as these incidents are integrated into the total structure of the story.

Children create and tell stories. The dictated transcriptions of their oral responses to "tell me a story" and retellings of the same or similar stories provide information about their developing sense of story and egocentric natures.

Language experience story dictation is deemed appropriate for young children who are not as experienced in writing as in telling stories. In addition, language experience story dictation assumes close ties between children's oral language and the content of the written form of their language which serves as the reading material. As children create stories, they are free to think and speak rather than to think and write.

Previous investigations on children's stories were concerned with young children's spontaneous responses to "tell me a story." The results indicated that two-year-old children are reluctant to tell a story and that five-year-old children are more likely to tell a story that is already familiar to them. Other investigations of children's stories were concerned with younger and older children's extemporaneous responses to stories, written and oral responses to stimuli stories and pictures, and retelling stories heard or read. The results generally suggest that children's stories contain important information about the children themselves.

Piaget's investigations of children's use of language imply that children's stories provide palpable evidence of their egocentric natures. Piaget's studies of children's cognitive development and use of language led to his belief that children (ages two to seven) are egocentric. Egocentric children are under the impression that their thoughts are similar to other people's thoughts. Explicit explanations of incidents in any particular order are unnecessary in order to justify a point of view.

The results of the investigations of causality, logical justification, and sequence indicate that as children increase in age, they seem to express some idea of these relations. The results revealed that causality is more prevalent in older children's stories than in younger children's stories, and logical justification was found to develop at a later age than causality. These results suggest that there is a tendency for older children to use causality, logical justification, and sequence as ways to structure their stories.

In addition, these results provide further background for asking questions about children's development of stories in the process of maturational development: Can it be expected that as children mature their stories will not only become longer, contain more T-units, words per T-unit, characters, and incidents as they tell stories, but also as they dictate stories in a more formal language experience environment? Will children tend to edit their language experience stories while dictating? Can it be expected that evidence of decreasing egocentrism as measured by the absence of the relations of causality, logical justification, and sequence will be apparent in children's language experience stories? The previously cited research suggests the possibility that several of these questions might be answered in the present investigation on children's stories.

Chapter 3

METHODOLOGY

The purpose of this study was dual in nature: First, to examine first grade children's oral language expression as reflected in their dictated language experience stories, and second, to study what these stories reveal about the relationship between children's levels of cognitive development and sense of story. The data collection procedures consisted of two phases. Phase I involved a study of conservation tasks to determine if the children were nonconservers or conservers. Phase II consisted of the collection and analysis of 362 language experience stories and of establishing the reliability of the judges' ratings of children's stories.

Description of the Research Design of the Study

Experimental Population and Sample. The subjects for this study were 181 first grade children (91 girls and 90 boys, mean age 6.99) enrolled in first grade classrooms in DeKalb County, Georgia. The subjects were drawn from four elementary schools located primarily in suburban residential areas of metropolitan Atlanta, Georgia. The county administrative officials and the investigator identified these schools as being cooperative and representative of a multi-ethnic and racially

balanced population. The subjects came from lower-middle class (schools 2,4) and upper-middle class (schools 1,3) populations. The term first grade children is used in this study to denote those children enrolled in the first grade for the first time. A description of the sample population by race, sex, and conservation is presented in Table 1.

There are discernible differences in the four schools which are noted here. School 1 has a total school enrollment of 574 children, of which 52 percent are Black, 47 percent White, and 1 percent Spanish. The teachers and children engage in the open school concept of learning. There are two first grade classrooms, two teachers, 58 children, and two paraprofessionals.

The total enrollment in School 2 is 324 children, of which 64 percent are White, 34 percent are Black, and 2 percent Oriental. Six percent of the children in the school are from homes for orphans and are under custodial care for family problems. There is one self-contained first grade classroom with twenty-two children, one teacher, and one paraprofessional.

School 3 has a total enrollment of 531 children, of which 51 percent are White, 48 percent Black, and 1 percent Spanish. The classrooms are self-contained and non-graded which means that children are never retained, instead they are placed on a continuous progress program. This program provides opportunity for children to work at their own pace. There are two self-contained first grade classrooms, 52 children, two teachers, and two paraprofessionals.

Table 1

Description of Sample

RACE	CONSERVATION				TOTAL
	Nonconservers Females Males		Conservers Females Males		
Black	41	39	3	6	89 (49%)
White	29	25	18	20	92 (51%)
Total	134 (77%)			47 (23%)	181 (100%)

School 4 has a total enrollment of 804 children, of which 52.5 percent are White, 47 percent Black, and .5 percent other. There are three first grade self-contained classrooms, 54 children, three teachers, and three para-professionals.

It is noted that each first grade enrollment is small in proportion to each school's total enrollment figures. The reason for the low enrollment is due to a change in Georgia's entrance age criterion for first grade children. Children must be six-years-old on or before September 1st of each school year. Previously children had to be six by December 30th. The year this study was conducted the first grade population was lower than ordinarily expected.

Initial Meeting with Principals, Teachers, and Children

The investigator met with the principal and teachers of each school to discuss the purposes and procedures of the study and to make arrangements for scheduling the study in their schools. A week later the investigator visited informally with the children in each school to discuss the return of parental permission forms, told stories, and sang songs with the children. During the week of informal visits, the investigator spent an entire day engaging in the following activities at each school with the children: listening to them read, assisting them with their school work, answering their questions, eating lunch with them, and listening to them talk to other children and their teachers.

All important information concerning daily class schedules, classroom activities, management techniques, noting the differences between the classrooms and schools, and other pertinent data about the teachers and the children were kept in a notebook by the investigator for future reference.

Informal Classroom Observations

In order to establish rapport with the teachers and children and to become familiar with the classroom environments prior to test administration and data collection, informal classroom observations were made. Permission for these observations were granted by each school principal. During these observations, the investigator observed the activities of the children in their various classroom environments and noted their daily routine activities which included visits to the library, visits from the music and art teachers, and their physical education (inside and outside the classroom) activities. The children were given an opportunity to get acquainted with the investigator prior to data collection. Appropriate times for testing the children were arranged by the teachers and the investigator in each school.

Method

Phase I: A Study of Conservation Tasks

Phase I of this study was conducted for the purpose of providing a brief and practical assessment of each child's level of conservation, no conservation or conservation. The

children were individually administered a test to determine if they were nonconservers or conservers.

Testing Instruments Used. The investigator individually administered a standardized conservation test, The Concept Assessment Kit--Conservation (Goldschmid and Bentler, 1968) to each child, either inside the classroom or in a private room outside the classroom. All children were given Form A. Those who correctly responded to all items on Form A were also given Form C in one test session.

Conservation was assessed by observing each child's behavior and by testing their understanding and explanation of the conservation principle. To assure that each child was a nonconservor or conservor, each child had two response scores of behavior and explanation. Conservation behavior is defined as the child's judgment of the quantity of two objects, one of which has been transformed by the investigator, whereas comprehension or understanding is assessed by the child's explanation for the judgment (Goldschmid and Bentler, 1968).

The Conservation Tasks. According to Goldschmid and Bentler's test manual directions, each child's level of conservation is assessed in eight areas: (Form A) substance, weight, continuous quantity, discontinuous quantity, number, two-dimensional space, and (Form C) area and length. Each of these areas was used by the investigator to assess conservation. Each child was asked to compare the volume, length, or substance of two objects after the shape, form, or size of one of the objects was transformed by the investigator.

Prior to each transformation, the investigator permitted each child to make changes in objects which (in the child's opinion) were unequal in size, weight, or volume. When the child was satisfied that the two objects were equal, the investigator manipulated one of the objects by transforming its shape, form, or position. For example, the child was shown two balls of Play-Doh and was asked, "Is there as much Play-Doh in this ball (demonstrated by pointing) as in that one, or does one have more?" The investigator recorded the child's behavior response. The investigator instructed the child to watch what was happening to one of the balls. The investigator then rolled one ball into the shape of a hot dog and asked the child, "Is there as much Play-Doh in this one (ball) as in that one (hot dog) or does one have more?" After the child had made a behavior response, the investigator asked, "Why?" as an explanation response. Each child's behavior and explanation responses were taped on a portable cassette tape recorder and written on standardized scoring forms.

Procedure for Scoring Conservation Tasks. A correct behavior response was scored if the child stated that the two objects were the same. If the child said they were not the same or that one had more than the other, the response was scored as incorrect. A correct explanation response was scored correct only if the child's conservation behavior was scored as correct and if one or more of the following conservation principles was understood (Goldschmid and Bentler, 1968):

- 1) Invariant quantity explanations such as "You did not add or

subtract anything; they were the same before and you did not change the weight; it is the same number." 2) Compensation explanations such as "This glass is taller, but it is also thinner; the hot dog is longer, but it is also thinner."

3) Reversibility explanations such as "If we put it back into this glass, it would be the same; if we made this back into a ball, it would be the same."

The explanation responses were scored incorrect if the child's conservation behavior was incorrect and if the answers did not conform to the above conservation principles. For example, if the child gave no explanation at all, a magical explanation such as "My teacher told me or I just know it"; a perceptual explanation such as "They look the same"; a description of part of the procedures such as "You made this into a line, or you poured water into this glass, or you moved the chips out"; then the response was scored incorrect.

To summarize the scoring procedure, if after the object was manipulated the child gave the correct behavior response and if the explanation of the response indicated adequate comprehension of the conservation, then the child received one point for that particular conservation area. If the child did not grasp either concept, then the child received zero. For both behavior and explanation responses, a correct response was scored as one and an incorrect response was scored as zero. The child who succeeded on both behavior and explanation in all conservation tasks (Forms A and C) was classified as a conserver. The child who did not succeed on all conservation tasks on Form A was classified as a nonconserver.

Phase II: Data Collection Procedures

Collection of Children's Stories. Two language experience stories for each of 181 first grade children for a total of 362 stories were collected. Each child's story was taped on a portable cassette tape recorder during two separate sessions for each child. The investigator transcribed each child's story as it was dictated. All subjects were given two comparable sets of tasks which were designed to elicit oral language samples in the form of language experience stories. These tasks are called Story One and Story Two.

Story One: Children's Drawings and Stories. Six children at a time were given a sheet of storybook drawing paper (12" x 18") and crayons of various colors. There was ample space at the top of the paper for the child's drawing and lined space at the bottom for the investigator to write the stories. The investigator instructed the children to draw a picture of anything they chose. They were also instructed not to copy anyone else's picture. The investigator observed that the children's drawings were unique. After the pictures were completed, the investigator instructed each child to "Tell me a story about your picture." Each child dictated a story about the picture, and the investigator transcribed the story that each child individually dictated. As children completed the task, other children were brought into the group to replace them.

Story Two: Children's Retelling of a Taped Story. Each

child was asked to respond to the same story which had been previously recorded by the investigator. The story of The Gingerbread Man (1963) was selected as a story which the children would most likely be familiar to assure that the task was comparable for all children. Each child was told how to operate the tape recorder and headphone, and instructed to listen to the story. After listening to the story, each child was to retell the story to the investigator who transcribed what was said. Each child was asked, "Tell me the story of The Gingerbread Man." As each child completed the task, another child replaced that child.

The taped story was approximately five minutes long. There was no time limit set for children to complete retelling their stories. Each child was given ample opportunity and time to dictate the story. There was little or no prompting other than comments by the investigator such as "...then what happened?"

Orientation Session for the Judges. At the completion of eight weeks of data collection, the investigator and four judges met in an orientation session. In a five-hour session the judges were trained how to analyze the children's stories according to specified criteria in this study. The judges were highly qualified to rate children's stories: two had doctorates in reading and two had master's degrees in elementary education. All had previous or present experience in teaching elementary school children.

Prior to the orientation session, each judge was mailed or

hand-delivered a packet containing background information to acquaint them with the purposes of the study, the subjects, procedures, definition of terms, and a copy of the data collection chart. At the beginning of the session, each judge was given a folder which contained a copy of the orientation session agenda (See Appendix B), a trial rating sheet to record individual ratings of ten subjects' stories, and an envelope containing 90 to 92 stories.

The investigator discussed the purposes, hypotheses, and reviewed the definition of terms as well as explain the eight criteria for their ratings (See Appendix B). Information concerning each subject's sex, age, race, level of conservation, and school had been coded on each judge's data collection charts. Children's names were excluded and they were given identification numbers for the purposes of accuracy of recording data. Each objective of the orientation session was met.

Reliability of Judges' Ratings. To assure that the judges were consistent in their ratings of children's stories, inter-rater reliability was performed. Each judge individually rated ten subjects' twenty stories that had been randomly selected from the pool of 362 stories. These stories were rated according to sixteen variables (eight variables for story one and the same eight for story two). The entire pool of stories was then equally divided and assigned alphabetically according to each judge's surname.

Judges' Ratings of Children's Stories. Based on a review of scoring procedures used in previous investigations (Pitcher

and Prelinger, 1963; Applebee, 1978) of children's stories, the investigator outlined a set of instructions for the judges (See Appendix B). The investigator instructed each judge to rate 90-92 stories for the frequency of the five characteristics of plot structures: number of words, number of T-units, average number of words per T-unit, number of characters, and number of incidents; and for the presence (1) or absence (0) of Piaget's decreasingly egocentric speech features: causality, logical justification, and sequence.

The judges were given three weeks to complete their ratings of the assigned children's stories. They were instructed to mail or hand-deliver all materials to the investigator. Each judge was cooperative and returned all information on or before the designated time period.

Summary

The subjects for this study were 181 first grade children enrolled in four elementary schools located in largely suburban residential areas of DeKalb County of metropolitan Atlanta, Georgia.

The study consisted of two phases. Phase I involved a study of conservation tasks to identify children as nonconservers or conservers. A standardized conservation test was administered individually to each child.

Phase II consisted of the collection and analysis of two language experience stories for each subject for a total of 362 stories and of establishing the reliability of the judges

ratings of children's stories. The language samples were studied to determine any significant differences in the frequency of the plot structures and the presence or absence of the decreasingly egocentric speech features. To establish interrater reliability four judges rated a random sampling of twenty stories and a two-way analysis of variance was employed.

Chapter 4

ANALYSIS OF DATA

Introduction

This chapter presents the analysis of data including an analysis of the reliability of judges' ratings, and an analysis of the correlation of the dependent variables. Ninety-one girls' and ninety boys' stories were analyzed according to eight dependent variables of story length, T-units, words per T-unit, characters, incidents, causality, logical justification, and sequence.

The data were analyzed using a complete factorial Multi-variate Analysis of Variance (MANOVA). The results are presented in three sections. Part one presents the results of the data in establishing the reliability of the judges' ratings. Part two presents the results of all data of each dependent variable of the comparative analyses for story one and story two and also presents significant main effects and interaction of main effects for each dependent variable. Part three presents the findings for the four hypotheses and discusses these findings for differences in nonconserving and conserving children and for differences in the two types of story stimuli. Finally, a summary of the overall findings is presented.

Reliability of Judges' Ratings

A two-way analysis of variance (variables by subjects) was employed to establish the reliability of the judges' ratings of ten subjects' twenty stories that had been randomly selected from the entire pool of stories (Ebel, 1951). Table 2 contains a summary table of the four judges' ratings. To assure that the judges were reliable Pearson product moment correlation coefficients were used. Each judge rated twenty stories according to two comparative analyses. In both analyses there were eight dependent variables for story one and story two for a total of sixteen dependent variables.

The results of the data revealed that the judges were highly consistent in their ratings. The median reliabilities for story one and story two were each .99, respectively ($p < .05$). However, there was inconsistency in their ratings of the number of incidents in story one and story two. The correlation coefficients for incidents for both stories were not statistically significant from 0.0 ($r = .19$ and $.03$, respectively). The critical value for accepting the coefficient as being statistically significant was $r = .602$, $df = 9$, $p < .05$. The low reliability correlation coefficients found in this study were parallel to the low correlation coefficients found of the judges' ratings of children's stories in Applebee's (1976) study.

The correlation matrix of the judges in Table 3 revealed high reliability correlation coefficients. The correlation matrix represents the intercorrelations of the sixteen dependent

Table 2

Summary of Reliability of Judges' Ratings

Variables	Reliabilities	
	Story One	Story Two
Story Length	.99*	.99*
T-units	.99*	.99*
Words Per T-unit	.87*	.91*
Characters	.62*	.67*
Incidents	.19	.03
Causality	.67*	.67*
Logical Justification	1.00*	.90*
Sequence	.66*	.00
Median Reliabilities	.99*	.99*

*P < .05

Table 3

Correlation Matrix of Judges

Judges	1	2	3	4
1	1.000	.99	.99	.99
2		1.000	.99	.99
3			1.000	.99
4				1.000

variables for twenty stories. This matrix reports all possible combinations of correlations between the judges.

Presentation and Interpretation of Data on Children's Stories

In the second part of the presentation and interpretation of data the results of each dependent variable for each significant main effect of story, conservation, sex, race, and for each significant interaction of these main effects on the dependent variable are reported. Each dependent variable is discussed as comparative data for story one and story two, for nonconserving and conserving children's stories, for differences in black and white children's stories, and for differences in boys' and girls' stories. This section also presents significant findings for each dependent variable for the four hypotheses of this study.

A complete factorial MANOVA using Statistical Analysis System (SAS), General Linear Model Procedure (Barr, et.al, 1976) tested whether there were significant differences between nonconserving and conserving first grade children's stories. This statistical test of the null hypothesis (no differences in means) was measured by Wilks' lambda statistic. As shown in Table 4 the application of this test yielded a Wilks' lambda calculated value of .9393 which was converted into an F value of 2.96 with 8 and 333 degrees of freedom. This F value is significant at the .05 level of significance. The null hypotheses of no overall conservation effects, no overall story effects, and no overall story by conservation

Table 4

MANOVA Test Criteria for the Null Hypotheses

Criterion	Calculated Value	df	F Value	p <.05
-----------	------------------	----	---------	--------

Wilks' lambda	0.93930940	8/333	2.69*	.0007
---------------	------------	-------	-------	-------

*p <.05

effects were rejected which implied that there were statistically significant differences between nonconserving and conserving children's stories.

Data on the Five Characteristics of Plot Structures

Results of the Dependent Variable Story Length. Table 5 shows the total frequency distributions of story length in nonconserving and conserving children's stories. It was found that for both groups there was a mean of 160 words and a standard deviation of 88.

The results of MANOVA for the dependent variable story length are shown in Table 6. In the various main effects and interactions of the main effects on the dependent variable story length there were four significant F values consisting of the main effects of story, conservation, sex and a significant interaction between story and conservation. All other main effects and interactions were not statistically significant at the .05 level.

Figure 1 is a graphic representation of the significant interaction between story and conservation on the dependent variable story length. This interaction is ordinal with girls' story one and story two both longer than boys' story one and story two ($F = 13.30, p < .05$). The interaction is the result of the differences between the sexes in story one being smaller than the differences in story two. Since the interaction is ordinal, main effects may be interpreted. Girls' story length is higher than boys' story length.

Table 5

Frequency Distribution of Story Length in Story One
and Story Two for Nonconservers and Conservers

CLASS INTERVALS	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
600-649	2	.55	0	0	2	.55
550-599	0	0	0	0	0	0
500-549	0	0	3	.83	3	.83
450-499	4	1.10	6	1.66	10	2.76
400-449	6	1.66	5	1.38	11	3.04
350-399	7	1.93	2	.55	9	2.48
300-349	13	3.59	13	3.59	26	7.18
250-299	17	4.70	2	.55	29	5.25
200-249	23	6.35	5	1.38	28	7.73
150-199	38	10.50	3	.83	41	11.33
100-149	29	8.01	28	7.74	57	15.75
50- 99	82	22.65	19	5.25	101	27.90
0- 49	47	12.99	8	2.21	55	15.70
TOTAL	268	74.03	94	25.97	362	100.00
MEAN = 160						
SD = 88						

N = 362

Table 6

Complete Factorial Multivariate Analysis of Variance

General Linear Models Procedure

Dependent Variable: Story Length

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		19.00*	.0001
Story 1	1	73		
Story 2		246	343.87*	.0001
Conservation: Nonconservers	1	147	19.06*	.0001
Conservers		194		
Story * Conservation	1		13.30*	.0003
Sex: Female	1	167		
Male		151	4.05*	.0448
Story * Sex	1		.88	.3492
Conservation * Sex	1		1.16	.2822
Story * Conservation * Sex	1		.02	.8751
Race: Black	1	146		
White		173	.94	.3900
Story * Race	1		.78	.4598
Conservation * Race	1		1.59	.2064

Table 6--Continued

SOURCE	df	MEAN	F VALUE	p < .05
MODEL	15		19.00*	.0001
Story * Conservation * Race	1		.59	.5551
Sex * Race	1		1.41	.2454
Story * Sex * Race	1		2.03	.1330
Conservation * Sex * Race	1		.77	.3809
Story * Conservation * Sex*Race	1		1.21	.2713

*p < .05

N = 362

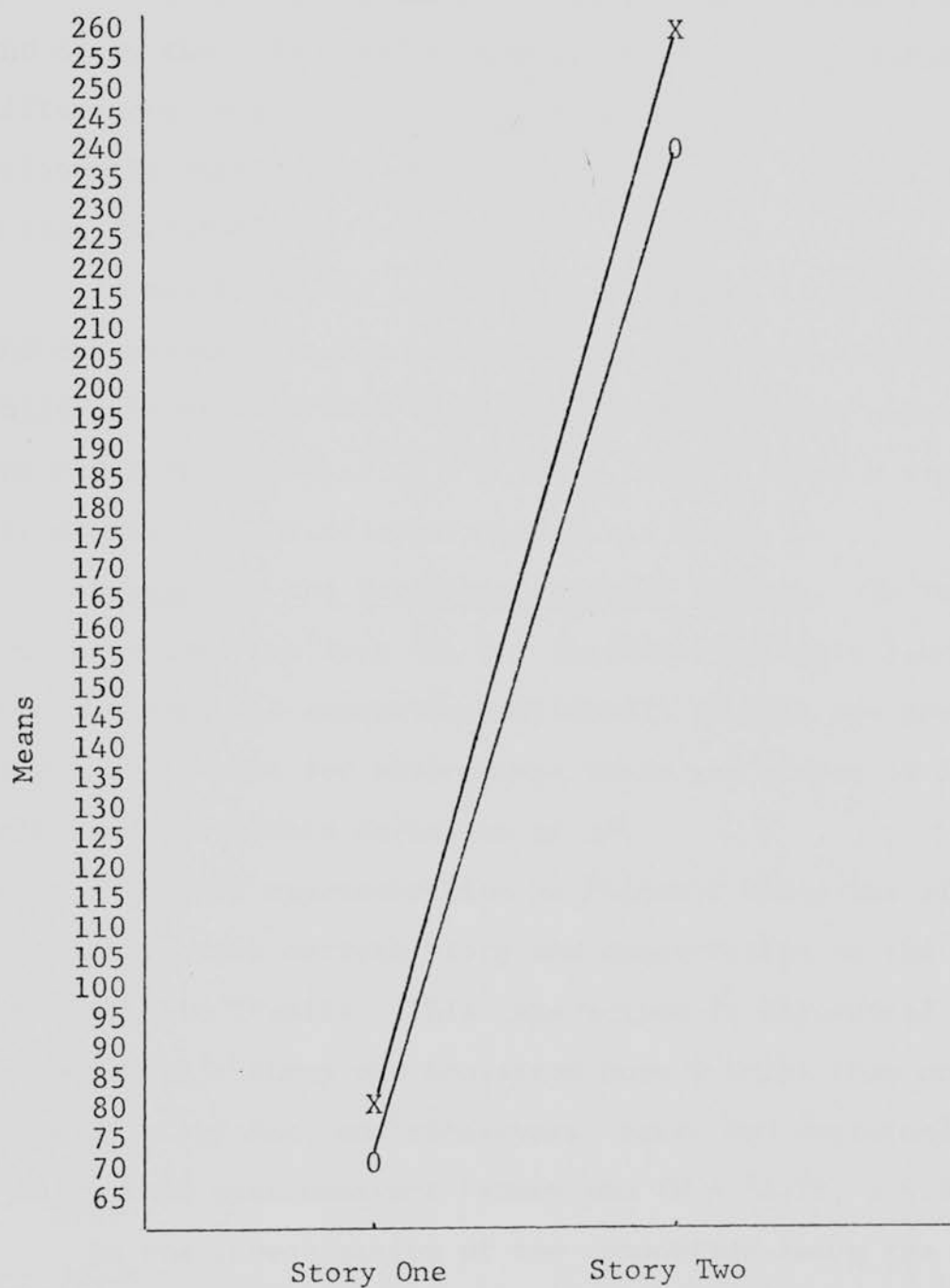


Figure 1
Means of Variable Story Length
For Girls' and Boys'
Story One and Story Two

X Girls

O Boys

In examining the means of story length in story one and story two, the results revealed statistically significant differences in stories. It was found that story two was significantly longer than story one ($F = 343.87, p < .05$). Thus, a significant main effect of story was found.

In examining the means of story length in nonconserving and conserving children's stories, it was found that conserving children's stories were significantly longer than nonconserving children's stories ($F = 4.05, p < .05$). Thus, a significant main effect of conservation was found.

Results of the Dependent Variable T-units. In Table 7 frequency distributions for the dependent variable T-units in nonconserving and conserving children's stories are presented. It was found that for both groups there was a mean of 26 T-units and a standard deviation of 14.

A graphic representation in Figure 2 shows the significant interaction between story and conservation on the dependent variable T-units. This interaction is disordinal since nonconservers' story one contained more T-units than conservers' story one, and conservers' story two contained more T-units than nonconservers' story two ($F = 11.79, p < .05$).

In the investigation of the comparison among the mean scores, a follow-up analysis was conducted to determine where the significant differences were after the significant F ratio had been obtained. To locate the significant differences, Tukey's HSD (Honestly Significant Difference) statistical procedure was performed to analyze each possible pair

Table 7

Frequency Distribution of T-Units in Story One and Story Two
For Nonconservers and Conservers

CLASS INTERVALS	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
90-99	1	.28	0	0	1	.28
80-89	1	.28	1	.28	2	.56
70-79	4	1.10	6	1.66	10	2.76
60-69	10	2.76	8	2.21	18	4.99
50-59	14	3.86	9	2.49	23	6.35
40-49	24	6.63	10	2.76	34	9.39
30-39	32	8.84	4	1.10	36	9.94
20-29	43	11.88	8	2.21	51	14.09
10-19	62	17.13	27	7.46	89	24.59
2- 9	77	21.27	21	5.80	98	27.07
TOTAL	268	74.03	94	25.97	362	100.00
MEAN = 26						
SD = 14						

N = 362

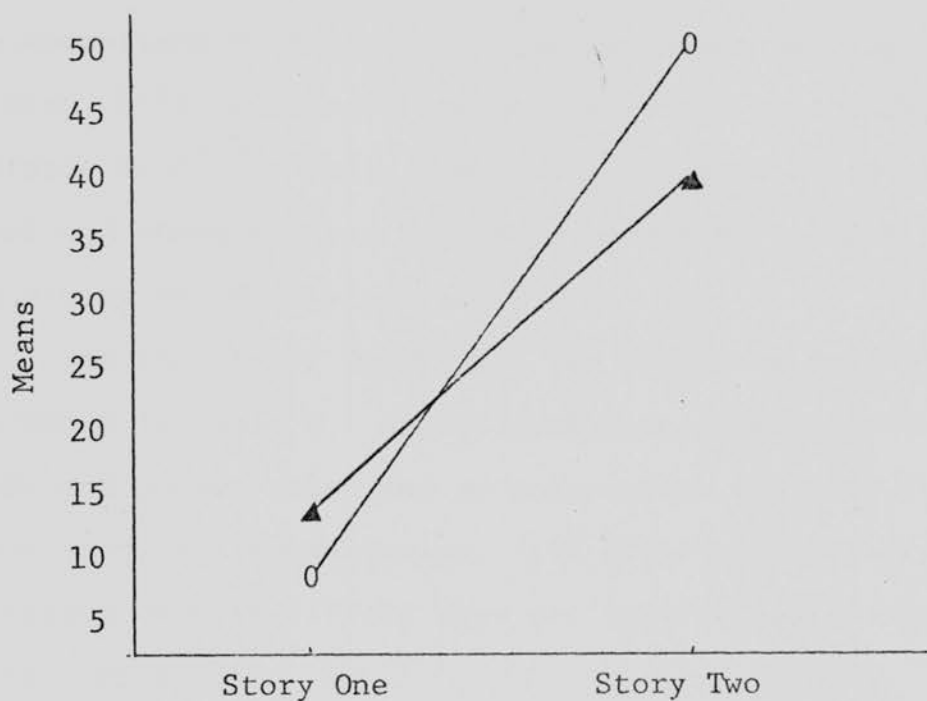


Figure 2

Means of Variable T-units For
Nonconservers and Conservers
Story One and Story Two

▲ Nonconservers

O Conservers

of mean scores to determine if the two means differed significantly from one another.

It was found that significant differences existed among the comparison of the mean scores for nonconserving and conserving children's story one and story two on the dependent variable T-units. Thus, conserving children's story one was lower and story two was higher in number of T-units than nonconserving children's stories.

The results of MANOVA for the dependent variable T-units are shown in Table 8. Significant main effects were found for story and conservation and an interaction was also found between story and conservation. All other main effects and interaction of main effects were not statistically significant at the .05 level.

The main effect of story two can be interpreted since the number of T-units in story two is higher in both cases for nonconserving and conserving children. However, the relationship between nonconserving and conserving children's story is reversed from story one to story two with nonconserving children's T-units being higher in story one and lower in story two than conserving children's stories.

In examining the means of T-units in story one and the means of T-units in story two, it was found that story two contained significantly more T-units than story one ($F = 393.31, p < .05$). Thus, a significant main effect of story was found.

In examining the means of T-units in nonconserving and

Table 8

Complete Factorial Multivariate Analysis of Variance

General Linear Models Procedure

Dependent Variable: T-Units

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		20.98*	.0001
Story 1	1	11		
Story 2		41	393.31*	.0001
Conservation: Nonconservers	1	24		
Conservers		31	14.86*	.0001
Story * Conservation	1		11.79*	.0007
Sex: Female	1	27	2.50	.1150
Male		25		
Story * Sex	1		.54	.4634
Conservation * Sex	1		1.48	.2242
Story * Conservation * Sex	1		.01	.9076
Race: Black	1	24		
White		28	.42	.6568
Story * Race	1		.38	.6872

Table 8--Continued

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		20.98*	.0001
Conservation * Race	1		2.30	.1015
Story * Conservation * Race	1		.65	.5245
Sex * Race	1		1.01	.3640
Story * Sex * Race	1		1.92	.1479
Conservation * Sex * Race	1		1.01	.3157
Story * Conservation * Sex * Race	1		1.63	.2026

*p < .05

N = 362

conserving children's stories, it was found that conserving children's stories contained more T-units than nonconserving children's stories ($F = 14.86, p < .05$). Thus, a significant main effect of conservation was found.

Results of the Dependent Variable Words per T-Unit.

Table 9 shows the frequency distributions of the dependent variable words per T-unit in nonconserving and conserving children's stories. It was found that for both groups there was a mean of 6 words per T-unit and a standard deviation of 1.1.

The results of MANOVA for the dependent variable words per T-unit are presented in Table 10. In the various main effects of story, conservation, sex, and race, only the main effect of story was found to be significant. All other main effects and interactions of main effects on the dependent variable words per T-unit were not statistically significant at the .05 level.

In examining the means of words per T-unit for story one and the means of words per T-unit for story two, it was found that story one contained more words per T-unit than story two ($F = 9.36, p < .05$).

Results of the Dependent Variable Characters. In Table 11 frequency distributions are presented for the dependent variable characters in nonconserving and conserving children's stories. It was found that for both groups there was a mean of 5 characters and a standard deviation of 1.3.

The graphic representation in Figure 3 presents a significant interaction between story and sex on the dependent variable characters in nonconserving and conserving children's

Table 9

Frequency Distribution of Words Per T-Unit in Story One
and Story Two for Nonconservers and Conservers

CLASS INTERVALS	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
9.0-9.9	7	1.93	5	1.38	12	3.31
8.0-8.9	20	5.53	4	1.10	24	6.63
7.0-7.9	28	7.73	13	3.60	41	11.33
6.0-6.9	90	24.86	39	10.78	129	35.64
5.0-5.9	99	27.35	26	7.18	125	34.53
4.0-4.9	21	5.80	4	1.10	25	6.90
3.0-3.9	2	.55	3	.83	5	1.38
2.0-2.9	1	.28	0	0	1	.28
TOTAL	268	74.03	94	25.97	362	100.00

MEAN = 6

SD = 1.1

N = 362

Table 10

Complete Factorial Multivariate Analysis of Variance

General Linear Models Procedure

Dependent Variable: Words per T-Unit

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		1.63*	.0405
Story 1	1	6.4		
Story 2		6.0	9.36*	.0024
Conservation: Nonconservers	1	6.2		
Conservers		6.4	3.42	.0651
Story * Conservation	1		.09	.7629
Sex: Female	1	6.3		
Male		6.1	2.08	.1506
Story * Sex	1		.01	.9258
Conservation * Sex	1		.04	.8336
Story * Conservation * Sex	1		2.58	.1093
Race: Black	1	6.1		
White		6.4	1.01	.3647
Story * Race	1		1.59	.2045

Table 10--Continued

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		1.63*	.0405
Conservation * Race	1		2.17	.1155
Story * Conservation * Race	1		.62	.5367
Sex * Race	1		.53	.5919
Story * Sex * Race	1		1.21	.3004
Conservation * Sex * Race	1		.13	.7202
Story * Conservation * Sex*Race	1		2.28	.1318

*p < .05

N = 362

Table 11

Frequency Distribution of Characters in Story One
and Story Two for Nonconservers and Conservers

CLASS INTERVALS	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
13-14	1	.28	0	0	1	.28
11-12	0	0	0	0	0	0
9-10	1	.28	0	0	1	.28
7- 8	57	15.74	25	6.90	82	22.64
5- 6	83	22.92	21	5.80	104	28.72
3- 4	62	17.13	21	5.80	83	22.93
0- 2	64	17.68	27	7.47	91	25.15
TOTAL	268	74.03	94	25.97	362	100.00

MEAN = 5

SD = 1.3

N = 362

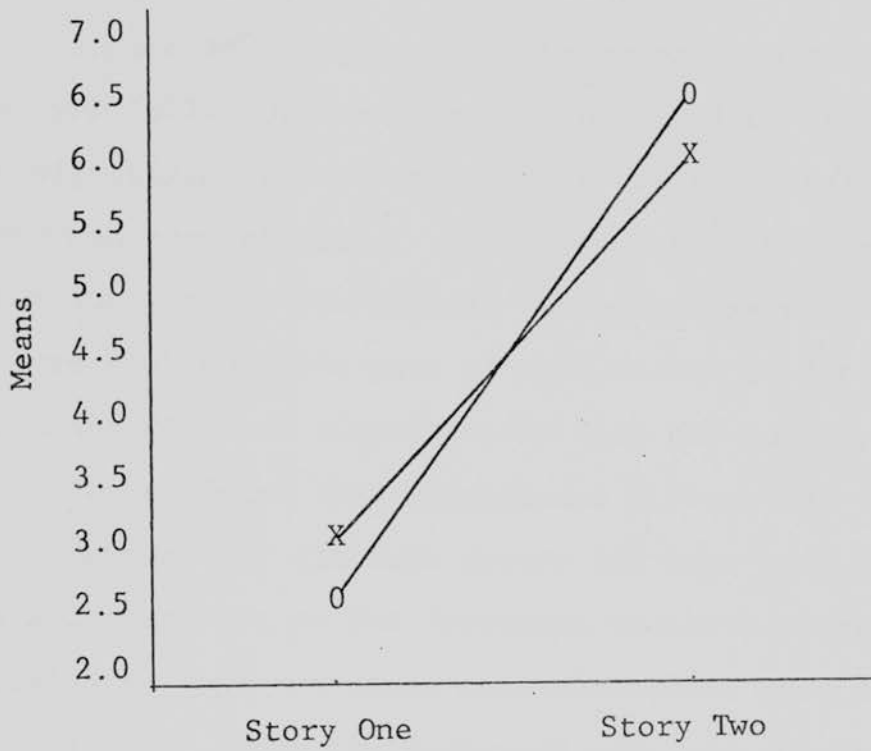


Figure 3

Means of Variable Characters
For Girls' and Boys'
Story One and Story Two

X Girls

O Boys

stories. This interaction is disordinal since girls' story one contained more characters than boys' story one, and boys' story two contained more characters than girls' story two ($F = 6.47, p < .05$).

In the investigation of the comparison among the mean scores, a follow-up analysis was conducted to determine where the significant differences were after the significant F ratio had been obtained. To locate the significant differences Tukey's HSD statistical procedure was performed to analyze each possible pair of mean scores to determine if the two means differed significantly from one another.

It was found that significant differences existed among the comparison of the mean scores for boys' and girls' story one and story two on the dependent variable characters. Thus, girls' story one contained more characters than boys' story one and boys' story two contained more characters than girls' story two.

The results of the MANOVA for the dependent variable characters in nonconserving and conserving children's stories are presented in Table 12. Significant main effects were found for story and race and an interaction was also found between story and sex on the dependent variable characters. All other main effects and interactions of the main effects were not statistically significant at the .05 level.

The main effect of story two can be interpreted since the number of characters in story two is higher in both cases for girls and boys. However, the relationship between

Table 12

Complete Factorial Multivariate Analysis of Variance

General Linear Models Procedure

Dependent Variable: Characters

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		30.13*	.0001
Story 1	1	2.9	604.40*	.0001
Story 2		6.2		
Conservation: Nonconservers	1	4.6		
Conservers		4.5	.01	.9134
Story * Conservation	1		3.10	.0793
Sex: Female	1	4.6		.5832
Male		4.5	.30	
Story * Sex	1		6.47*	.0114
Conservation * Sex	1		.70	.4047
Story * Conservation * Sex	1		3.49	.0624
Race: Black	1	4.4		
White		4.7	3.33*	.0371
Story * Race	1		.18	.8326

Table 12--Continued

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		30.13*	.0001
Conservation * Race	1		.10	.9946
Story * Conservation * Race	1		.07	.9328
Sex * Race	1		.51	.6008
Story * Sex * Race	1		1.22	.2960
Conservation * Sex * Race	1		.08	.7828
Story * Conservation * Sex*Race	1		3.46	.0636

*p < .05

N = 362

girls' and boys' story is reversed from story one to story two with the number of characters being higher in girls' story one and lower in story two.

In examining the means of characters in story one and the means of characters in story two, it was found that story two contained significantly more characters than story one ($F = 604.40$, $p < .05$). Thus, a significant main effect of story was found.

In examining the means of characters in black and white children's stories it was found that white children's stories contained more characters than black children's stories ($F = 3.33$, $p < .05$). Thus, a significant main effect of race was found.

Results of the Dependent Variable Incidents. Table 13 presents frequency distributions of the dependent variable incidents in nonconserving and conserving children's stories. It was found that both groups of children had a mean of 5 incidents and a standard deviation of 2.

A graphic representation of the significant interaction between story and sex on the dependent variable incidents is presented in Figure 4. This interaction is disordinal since girls' story one contained more incidents than boys' story one, and boys' story two contained more incidents than girls' story two ($F = 5.69$, $p < .05$).

In the investigation of the comparison among the mean scores, a follow-up analysis was conducted to determine where the significant differences were after the significant F

Table 13

Frequency Distribution of Incidents in Story One and Story Two
For Nonconservers and Conservers

CLASS INTERVALS	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
13-14	0	0	1	.28	1	.28
11-12	2	.55	0	0	2	.55
9-10	11	3.04	2	.55	13	3.59
7- 8	71	19.61	28	7.73	99	27.34
5- 6	74	20.44	25	6.91	99	27.35
3- 4	67	18.51	17	4.70	84	23.21
1- 2	43	11.88	21	5.80	64	17.68
TOTAL	268	74.03	94	25.97	362	100.00

MEAN = 5

SD = 2

N = 362

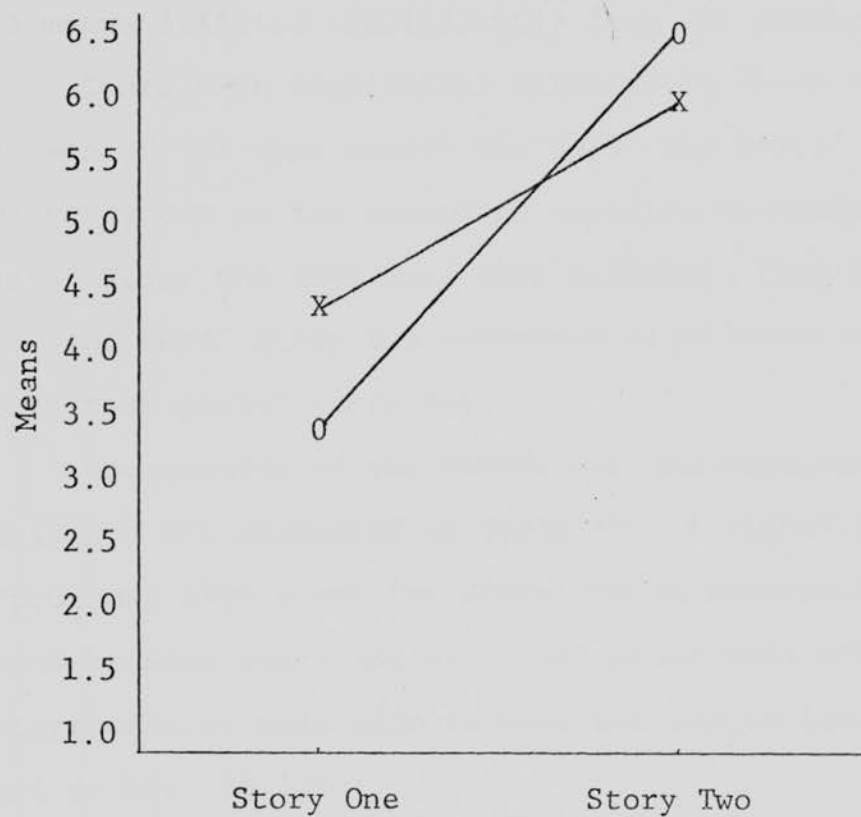


Figure 4

Means of Variable Incidents
For Girls' and Boys'
Story One and Story Two

X Girls

O Boys

ratio had been obtained. To locate the significant differences, Tukey's HSD statistical procedure was performed to analyze each possible pair of mean scores to determine if the two means differed significantly from one another.

There were significant differences found among the comparison of the mean scores for boys' and girls' story one and story two on the dependent variable incidents. Thus, girls' story one contained more incidents than boys' story one, and boys' story two contained significantly more incidents than girls' story two.

The results of the MANOVA for the dependent variable incidents are presented in Table 14. A significant main effect was also found for story and an interaction was also found between story and sex. All other main effects and interaction of main effects were not statistically significant at the .05 level.

The main effect of story two can be interpreted since the number of incidents in story two is higher in both cases for boys and girls. However, the relationship between boys' and girls' story is reversed from story one to story two with the number of incidents in girls' story one being higher and the number of incidents being lower in story two.

In examining the means of incidents for story one and the means of incidents for story two, it was found that story two contained significantly more incidents than story one ($F = 209.32, p < .05$). Thus, a significant main effect of story was found.

Table 14

Complete Factorial Multivariate Analysis of Variance

General Linear Models Procedure

Dependent Variable: Incidents

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		11.21*	.0001
Story 1	1	3.6	209.32*	.0001
Story 2		6.4		
Conservation: Nonconservers	1	5.1	.63	.4263
Conservers		4.9		
Story * Conservation	1		.93	.3364
Sex: Female	1	5.2	2.44	.1190
Male		4.9		
Story * Sex	1		5.69*	.0176
Conservation * Sex	1			.5134
Story * Conservation * Sex	1		1.08	.3002
Race: Black	1	4.9	2.44	.2149
White		5.2		
Story * Race	1		1.10	.3345

Table 14--Continued

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		11.21*	.0001
Conservation * Race	1		.28	.7544
Story * Conservation * Race	1		.67	.5102
Sex * Race	1		1.02	.3609
Story * Sex * Race	1		.89	.4122
Conservation * Sex * Race	1		.01	.9299
Story * Conservation * Sex*Race	1		3.86	.0504

*p < .05

N = 362

Data on Piaget's Decreasingly Egocentric Speech Features

Results of the Dependent Variable Causality. Table 15 presents the frequency distributions of the absence or presence of the dependent variable causality in nonconserving and conserving children's stories. It was found that story one and story two had a mean of .09 causality and a standard deviation of .28.

The results of MANOVA for the dependent variable causality are shown in Table 16. A significant interaction between story and race was found. All other main effects and interactions of main effects were not statistically significant at the .05 level.

A graphic representation of the significant interaction between story and race is shown in Figure 5. This interaction is ordinal with white children's story one containing more causality than black children's story one, yet both races of children's story two contained the same amount of causality ($F = 3.86, p < .05$). The interaction is the result of the differences between the races in story two being smaller than the differences in story one. Since the interaction is ordinal the main effects of race and story may be interpreted. White children's story one is higher in the amount of causality than black children's story one. Both races of children's story two contain the same amount of causality.

Results of the Dependent Variable Logical Justification.

Table 17 presents the frequency distributions of the absence or presence of the dependent variable logical justification

Table 15
Frequency Distribution of Causality in Story One and Story Two
For Nonconservers and Conservers

	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
Absence (0)	248	68.51	81	22.38	329	90.88
Presence (1)	20	5.52	13	3.59	33	9.12
TOTAL	268	74.03	94	25.97	362	100.00

MEAN = .09

SD = .28

N = 362

Table 16
Complete Factorial Multivariate Analysis of Variance
General Linear Models Procedure
Dependent Variable: Causality

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		1.97*	.0072
Story 1	1	.12	2.85	.0925
Story 2		.07		
Conservation: Nonconservers	1	.075	3.59	.0590
Conservers		.138		
Story * Conservation	1		.33	.5680
Sex: Female	1	.099		
Male		.083	.43	.5128
Story * Sex	1		1.61	.2058
Conservation * Sex	1		3.79	.0533
Story * Conservation * Sex	1		1.28	.2589
Race: Black	1		1.35	.2614
White				
Story * Race	1		3.86*	.0219
Conservation * Race	1		1.52	.2204

Table 16--Continued

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		1.97*	.0072
Story * Conservation * Race	1		2.09	.1257
Sex * Race	1		1.71	.1822
Story * Sex * Race	1		2.93	.0547
Conservation * Sex * Race	1		.01	.9241
Story * Conservation * Sex*Race	1		.67	.4147

*p < .05

N = 362

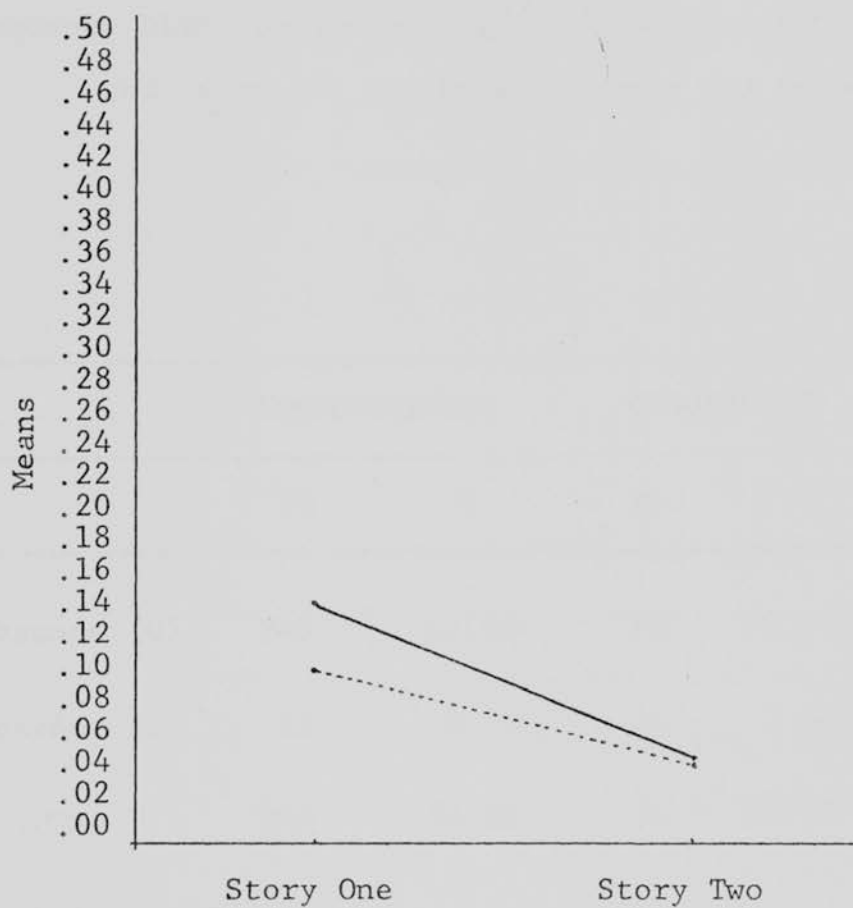


Figure 5

Means of Variable Causality
For Black and White Children's
Story One and Story Two

----- Black

_____ White

Table 17

Frequency Distribution of Logical Justification in Story One
and Story Two for Nonconservers and Conservers

	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
Absence (0)	245	67.68	80	22.10	325	89.78
Presence (1)	23	6.35	14	3.87	37	10.22
TOTAL	268	74.03	94	25.97	362	100.00

MEAN = .10

SD = .30

N = 362

in nonconserving and conserving children's stories. It was found that story one and story two had a mean of .10 logical justification and a standard deviation of .30.

Two graphic representations of significant interactions among conservation, race, and sex for nonconserving and conserving children's stories are presented in Figure 6. There was a significant three-way interaction among conservation, race, and sex on the dependent variable logical justification. It was found that nonconserving black girls' stories contained more logical justification than conserving black girls' and nonconserving white girls' and boys' stories and less logical justification than conserving black and white boys' stories.

In the investigation of the comparison among the mean scores, a follow-up analysis was conducted to determine where the significant differences were after the significant F ratio was obtained. To locate the significant differences, Tukey's HSD statistical procedure was performed to analyze each possible pair of mean scores to determine if the two means differed significantly from one another.

The results revealed that there were no statistically significant differences among the comparison of the mean scores for nonconserving and conserving black and white girls' and boys' stories on the dependent variable logical justification. Thus, there were no significant differences in the amount of logical justification in nonconserving and conserving black and white girls' and boys' stories.

Table 18 shows one significant main effect, race, on the dependent variable logical justification ($F = 4.15, < .05$).

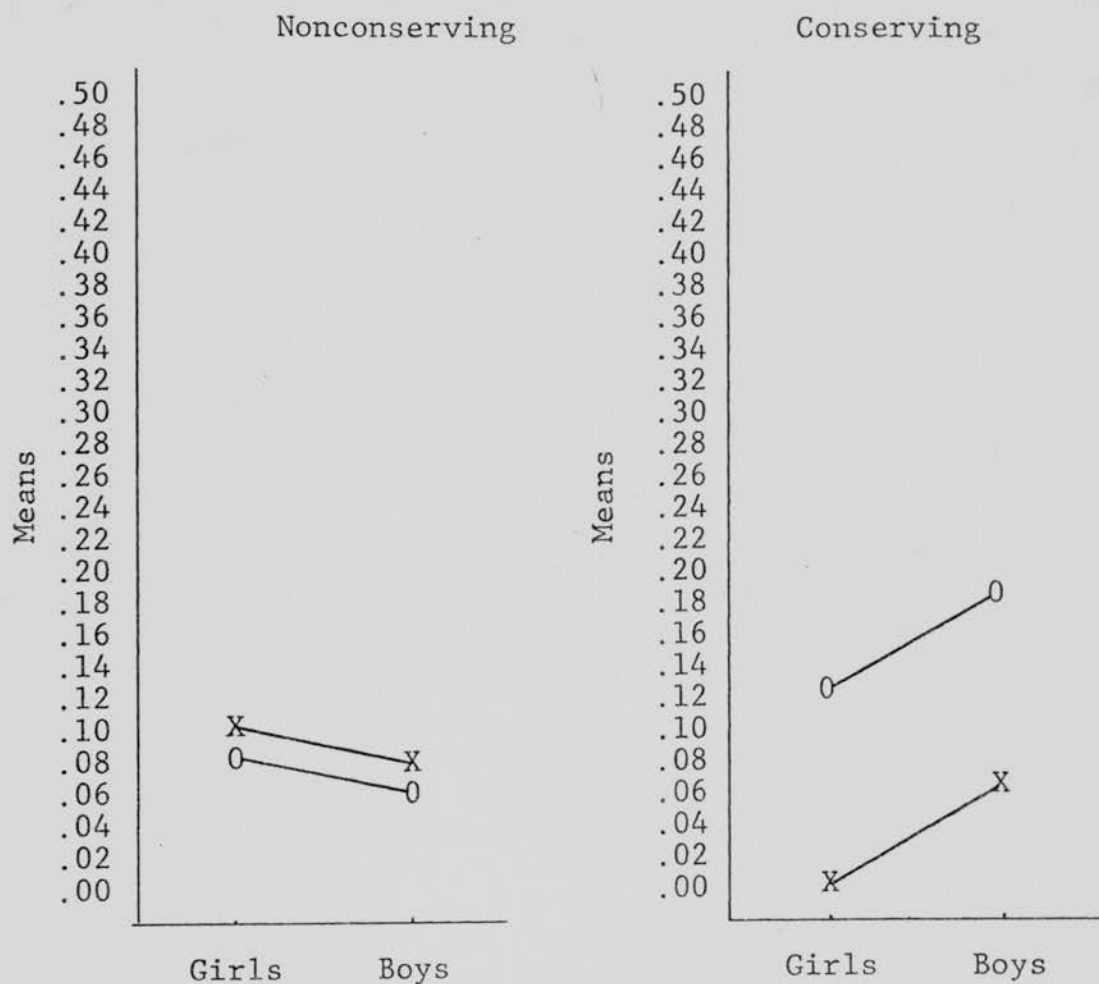


Figure 6

Means of Variable Logical Justification
for Black and White
Nonconserving and Conserving
Boys and Girls

X Black

O White

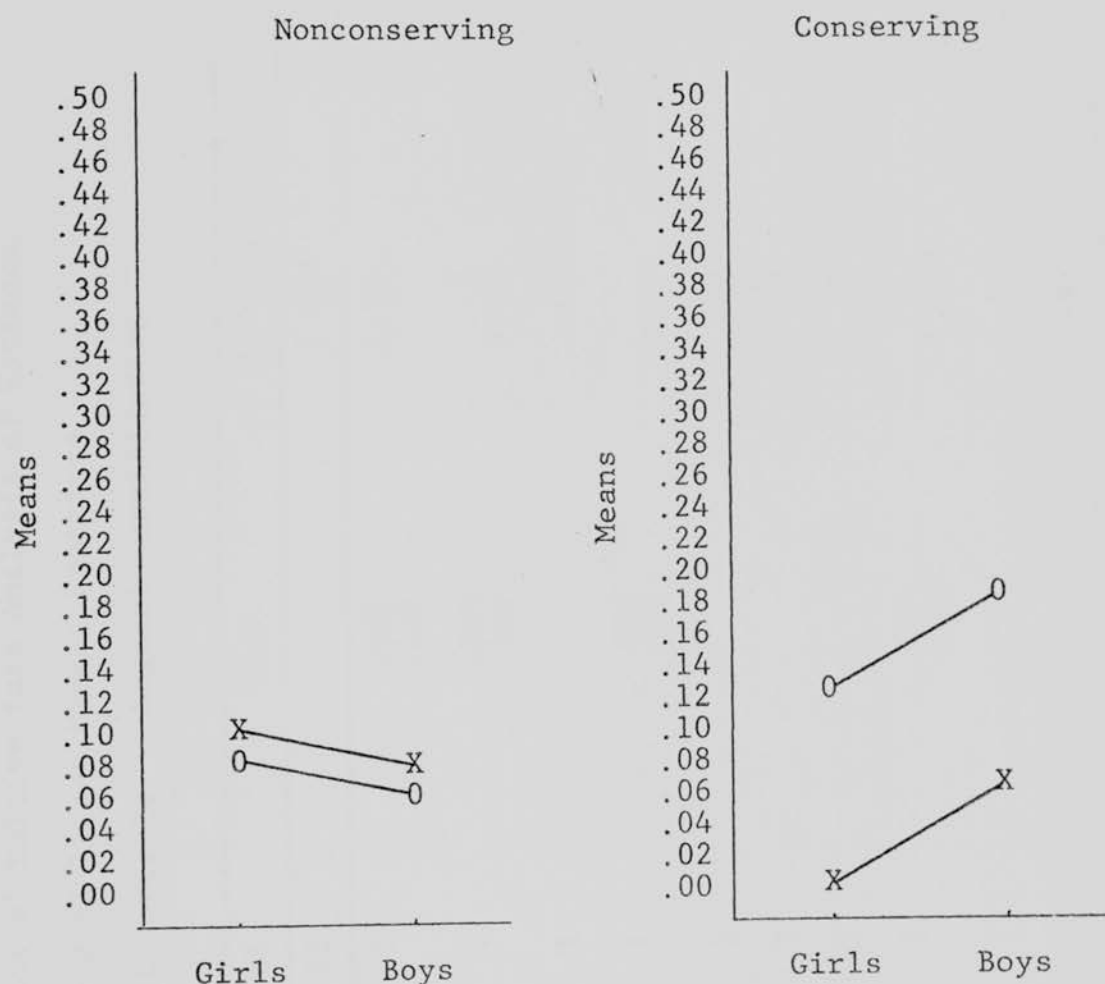


Figure 6

Means of Variable Logical Justification
for Black and White
Nonconserving and Conserving
Boys and Girls

X Black

O White

Table 18

Complete Factorial Multivariate Analysis of Variance

General Linear Models Procedure

Dependent Variable: Logical Justification

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		1.93*	.0092
Story 1	1	.082	1.55	.2140
Story 2		.121		
Conservation: Nonconservers	1	.086		
Conservers		.149	3.17	.0757
Story * Conservation	1		.01	.9411
Sex: Female	1	.126		
Male		.078	2.84	.0927
Story * Sex	1		.03	.8571
Conservation * Sex	1		.18	.6690
Story * Conservation * Sex	1		.39	.5343
Race: Black	1	.074		
White		.012	4.15*	.0166
Story * Race	1		.49	.6133
Conservation * Race	1		.67	.5122

Table 18--Continued

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		1.93*	.0092
Story * Conservation * Race	1		2.38	.0943
Sex * Race	1		1.71	.1816
Story * Sex * Race	1		1.90	.1512
Conservation * Sex * Race	1		4.27*	.0396
Story * Conservation * Sex*Race	1		.06	.8023

*p < .05

N = 362

However, race is included in a three-way interaction and hence, will not be discussed as a main effect. In Table 18 there was a significant interaction among conservation, race, and sex on the dependent variable logical justification ($F = 4.27$, $p < .05$). Although this three-way interaction is significant in the model, Tukey's HSD test of pair-wise comparison of mean scores revealed no significant differences in the amount of logical justification in non-conserving and conserving black and white girls' and boys' stories.

Results of the Dependent Variable Sequence. In Table 19 frequency distributions are presented for the dependent variable sequence in nonconserving and conserving children's stories. It was found that story one and story two had a mean of .80 for sequence and a standard deviation of .38.

The results of MANOVA for the dependent variable sequence are shown in Table 20. A significant main effect of story was found and interactions were also found between conservation and sex and between sex and race. All other main effects and interactions were not statistically significant at the .05 level.

A graphic representation of the significant interaction between conservation and sex is shown in Figure 7. This interaction is disordinal since conserving girls' stories contained more sequence than conserving boys' stories, and nonconserving boys' stories contained more sequence than nonconserving girls' stories ($F = 4.58$, $p < .05$).

Table 19

Frequency Distributions of Sequence in Story One and Story Two
For Nonconservers and Conservers

	NONCONSERVERS		CONSERVERS		TOTAL	
	NO.	%	NO.	%	NO.	%
Absence (0)	58	16.02	14	3.87	72	19.89
Presence (1)	201	58.01	80	22.10	290	80.11
TOTAL	268	74.03	94	25.97	362	100.00

MEAN = .80

SD = .38

N = 362

Table 20

Complete Factorial Multivariate Analysis of Variance

General Linear Models Procedure

Dependent Variable: Sequence

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		2.56*	.0002
Story 1	1	.719	16.98*	.0001
Story 2		.883		
Conservation: Nonconservers	1	.784	2.16	.1422
Conservers		.851		
Story * Conservation	1		3.29	.0706
Sex: Female	1	.774		
Male		.828	1.50	.2218
Story * Sex	1		.02	.8862
Conservation * Sex	1		4.58*	.0330
Story * Conservation * Sex	1		3.02	.0834
Race: Black	1	.756	1.90	.1512
White		.848		
Story * Race	1		1.99	.1384
Conservation * Race	1		.69	.5019

Table 20--Continued

SOURCE	df	MEAN	F VALUE	p < .05
Model	15		2.56*	.0002
Story * Conservation * Race	1		.46	.5019
Sex * Race	1		4.06*	.0181
Story * Sex * Race	1		1.34	.2641
Conservation * Sex * Race	1		.82	.3662
Story * Conservation * Sex*Race	1		.60	.4387

*p < .05

N = 362

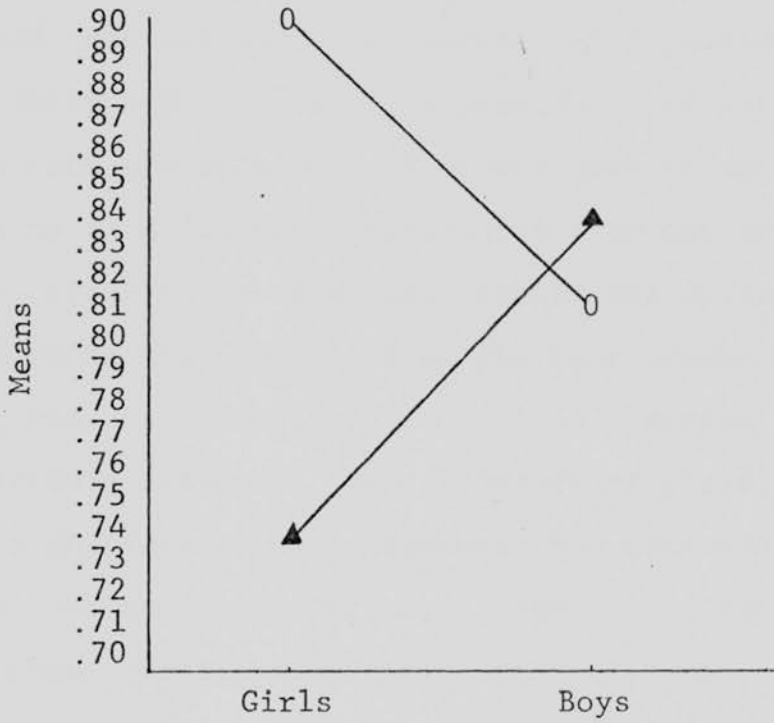


Figure 7

Means of Variable Sequence
For Nonconserving and Conserving
Girls and Boys

▲ Nonconservers

○ Conservers

In the investigation of the comparison among the mean scores, a post hoc analysis was performed to determine where the significant differences were after the significant F ratio had been obtained. To locate the significant differences, Tukey's HSD statistical procedure was performed to analyze each possible pair of mean scores to determine if the two means differed significantly from one another.

The results revealed that significant differences existed among the comparison of the mean scores of nonconserving and conserving boys' and girls' stories on the dependent variable sequence. Thus, conserving girls' stories contained significantly more sequence than conserving boys' stories, and nonconserving boys' stories contained more sequence than nonconserving girls' stories. Overall, conserving girls' stories contained more sequence than the other children's stories.

A graphic representation of a significant interaction between sex and race is shown in Figure 8. This interaction is disordinal since white girls' stories contained more sequence than white boys', and black boys' stories contained more sequence than black girls' stories ($F = 4.06, p < .05$).

In the investigation of the comparison among the mean scores, a post hoc analysis was conducted to determine where the significant differences were after the significant F ratio had been obtained. To locate the significant differences, Tukey's HSD statistical procedure was performed to analyze each possible pair of mean scores to determine if the two means differed significantly from one another.

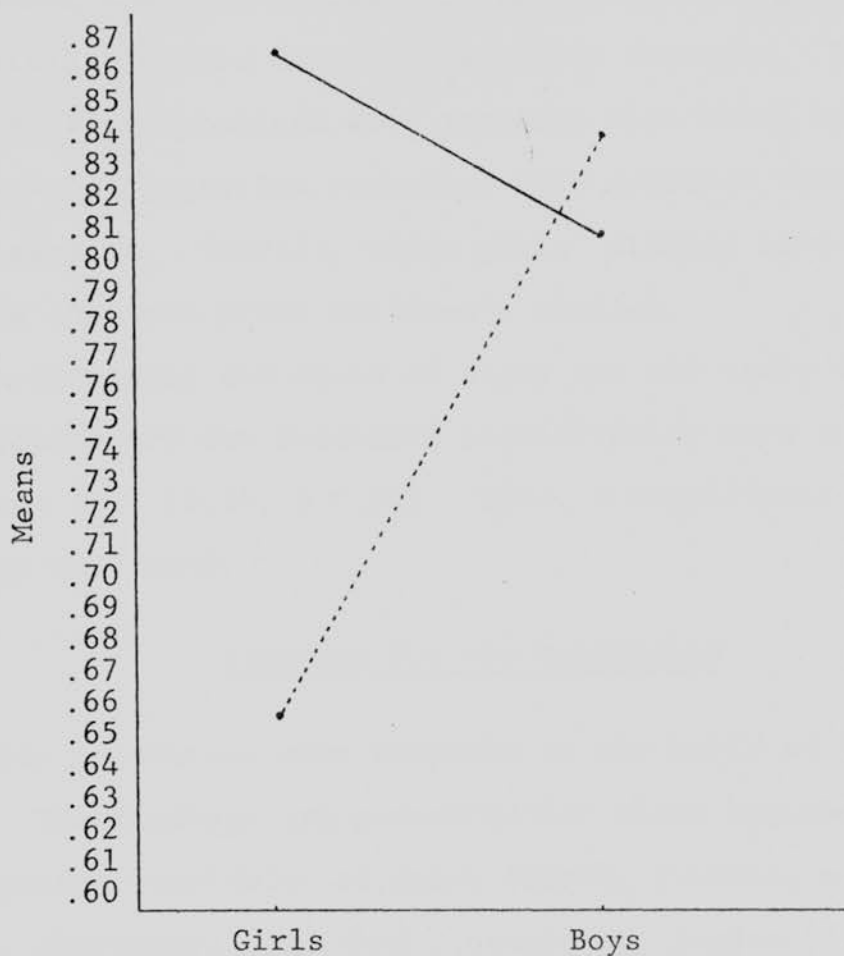


Figure 8
Means of Variable Sequence
For Black and White
Boys and Girls

----- Black

_____ White

The results revealed that there were significant differences among the mean scores for black and white girls' and boys' stories on the dependent variable sequence. Thus, white girls' stories contained more sequence than white boys' stories, and black boys' stories contained more sequence than black girls' stories. Overall, white girls' stories contained more sequence than the other children's stories.

In examining the means of story one and story two, it was found that story two contained significantly more sequence than story one ($F = 16.98$, $p < .05$). Thus, a significant main effect of story was found.

Findings for the Hypotheses

Four hypotheses were proposed at the basis of this study. The findings are presented for these hypotheses of the dependent variables of story length, T-units, words per T-unit, characters, incidents, causality, logical justification, and sequence.

Hypothesis One

Hypothesis 1 states: There are significant differences between nonconserving and conserving first grade children's dictated language experience stories according to five characteristics of plot structures and Piaget's decreasingly egocentric speech features.

The results revealed statistically significant differences between nonconserving and conserving children's stories in only two of the eight variables. It was found that nonconserving children's stories contained significantly fewer

words and significantly fewer T-units than conserving children's stories. There were no significant differences in the average number of words per T-unit, number of characters, number of incidents, sequence, causality, and logical justification in nonconserving and conserving children's stories. There were significant differences, but these differences existed for only two of the eight characteristics used in the present study to analyze nonconserving and conserving children's stories.

Differences in Nonconserving and Conserving Children's Stories. In comparing nonconserving and conserving children's stories on the dependent variable story length, it was found that conserving children stories are longer than nonconserving children's stories ($F = 19.06, p < .05$).

In comparing nonconserving and conserving children's stories, a significant interaction of story by conservation on the dependent variable T-units was found. The results revealed that nonconserving children's story one was higher and story two was lower in the number of T-units than conserving children's stories ($F = 11.79, p < .05$).

Differences in Story One and Story Two. In comparing story one with story two on the dependent variable story length, it was found that story two was significantly longer than story one ($F = 343.87, p < .05$).

In comparing story one with story two on the dependent variable words per T-unit, it was found that story one contained more words per T-unit than story two ($F = 9.36, p < .05$).

In comparing story one with story two on the dependent variable characters, it was found that story two contained more characters than story one ($F = 604.40$, $p < .05$).

In comparing story one with story two on the dependent variable incidents, it was found that story two contained more incidents than story one ($F = 209.32$, $p < .05$).

To summarize the findings of hypothesis 1, nonconserving children's stories contained significantly fewer words and number of T-units than conserving children's stories. The findings for the differences in stories were that story one contained significantly fewer words, significantly fewer T-units, significantly more words per T-units, significantly fewer characters, significantly fewer incidents, significantly less causality, significantly less logical justification, and significantly less sequence than story two. Thus, hypothesis 1 was supported.

Hypothesis Two

Hypothesis 2 states: Nonconserving first grade children's dictated language experience stories contain significantly fewer of the five characteristics of plot structures than conserving children's stories.

It was found that nonconserving children's stories contained significantly fewer words and significantly fewer T-units than conserving children's stories. Thus, hypothesis 2 was not supported because nonconserving children's stories contained significantly fewer of only two (story length and T-units) of the five characteristics of plot structures.

Hypothesis Three

Hypothesis 3 states: Nonconserving first grade children's dictated language experience stories contain significantly fewer of Piaget's decreasingly egocentric speech features than conserving children's stories.

It was found that there were no statistically significant differences in the amount of causality, logical justification, and sequence in nonconserving and conserving first grade children's stories. Thus, hypothesis 3 was not supported.

Hypothesis Four

Hypothesis 4 states: The five characteristics of plot structures: story length, T-units, words per T-unit, characters, and incidents positively and significantly correlate with Piaget's decreasingly egocentric speech features: causality, logical justification, and sequence.

In Table 21 there were three significant findings in testing hypothesis 4. The first finding was that causality did not relate positively and significantly to any of the plot structures. The second finding was that logical justification was positively and significantly related to story length, T-units, and incidents. The third finding was that sequence was positively and significantly related to story length, T-units, characters, and incidents. Thus, hypothesis 4 was not supported.

Table 21

Correlation Matrix of the Five Identified Characteristics of Plot Structures
and Piaget's Decreasingly Egocentric Speech Features
Story One and Story Two

Measures	CORRELATION COEFFICIENTS							
	1	2	3	4	5	6	7	8
1. Causality	1.000	.37*	-.18*	-.00	-.01	-.03	-.07	-.00
2. Logical Justification		1.000	.03	.15*	.15*	-.03	.08	.11*
3. Sequence			1.000	.21*	.21*	.01	.19*	.16*
4. Story Length				1.000	.98*	-.04	.67*	.53*
5. T-Units					1.000	-.20*	.68*	.55*
6. Words Per T-Unit						1.000	-.11	-.15*
7. Characters							1.000	.67*
8. Incidents								1.000

* $p < .05$

N = 362

Summary of Findings for Differences in Nonconserving and Conserving Children's Stories

Five Characteristics of Plot Structures

Conserving children's stories are significantly longer and contain more T-units than nonconserving children's stories.

Conserving children's story retellings contain significantly more T-units than nonconserving children's story retellings.

Nonconserving children's personally created stories contain significantly more T-units than conserving children's personally created stories.

Nonconserving and conserving children's retelling of stories contains more T-units than their personally created stories.

There are no significant differences in the number of characters and the number of incidents in nonconserving and conserving children's stories.

Story retellings contain significantly more words, significantly more T-units, significantly more characters, significantly more incidents, significantly less words per T-units, and significantly more sequence than personally created stories.

Piaget's Decreasingly Egocentric Speech Features

There is no significant difference in the amount of causality in nonconserving and conserving children's stories.

There is no significant difference in the amount of logical justification in nonconserving and conserving children's stories.

Causality is not significantly related to any of the five plot structures, however, it is significantly and positively related to logical justification and sequence.

Logical justification is positively and significantly related to story length, T-units, and incidents.

Sequence is positively and significantly related to story length, T-units, characters and incidents.

Ancillary Findings

Although the variables of sex and race were not originally hypothesized to examine differences in nonconserving and conserving children's stories, there were some interesting and significant results in this study. These additional findings have provided directions for future research questions concerning sex and race differences in nonconserving and conserving first grade children's language experience stories.

Sex Differences in Children's Stories

First grade girls tell longer stories than first grade boys.

First grade girls' personally created stories contain more characters and incidents than first grade boys' personally created stories.

First grade boys' retelling of stories contains more characters and incidents than girls' retelling of stories.

Nonconserving boys' stories contain more sequence than nonconserving girls' stories.

Conserving girls' stories contain more sequence than conserving boys' stories.

Conserving girls' stories contain more sequence than nonconserving girls' and boys' and conserving boys' stories.

Race Differences in Children's Stories

There are no significant differences in the number of words in black and white first grade children's stories.

There are no significant differences in the number of T-units in black and white first grade children's stories.

There are no significant differences in the number of words per T-unit in black and white first grade children's stories.

There are significant differences in the number of characters in black and white first grade children's stories. White first grade children's stories contain more characters than black first grade children's stories.

There are no significant differences in the number of incidents in black and white first grade children's stories.

There are no significant differences in the amount of causality in black and white first grade children's retellings of stories. However, there are significant differences in both races of first grade children's personally created stories. White first grade children's personally created stories contain more causality than black first grade children's personally created stories.

There are no significant differences in the amount of logical justification in black and white first grade children's stories.

There are significant differences in the amount of sequence in black and white first grade children's stories. White first grade girls' stories contain more sequence than white first grade boys' stories, and black first grade boys' stories contain more sequence than black first grade girls' stories.

Chapter 5

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

This study investigated oral language expression through dictated language experience stories told by non-conserving and conserving first grade children. The language samples were analyzed for the frequency of the five characteristics of plot structures and for the presence or absence of Piaget's decreasingly egocentric speech features.

The purpose of the study was dual in nature: First, to analyze first grade children's oral language expression to reveal their sense of story and egocentric natures, and second, to determine if a relationship exists between plot structures and decreasingly egocentric speech features.

Chapter 5 is presented in three parts. Part one presents discussions of the reliability of the judges' ratings, the five characteristics of plot structures, Piaget's decreasingly egocentric speech features, the four hypotheses of this study, differences in nonconserving and conserving children's stories, differences in stories, and ancillary findings for the variables of sex and race.

In part two discussions of the implications for theory and practice and observations during story dictations are presented. Part three presents recommendations for future research and a concluding statement.

Discussion

The results of this study must be interpreted within the limitations inherent in this study. First, although the subjects were from multi-ethnic and racial backgrounds, they may not be representative of the general population of first grade children. Second, there are oral language differences since children came from various economic, social, and cultural backgrounds. Third, the two language samples may not be indicative of first grade children's actual language use. It is possible that the same results would not be obtained if the investigator were to use a wide variety of oral language stimuli. Fourth, while the study was conducted in a school setting, for experimental purposes, the children were either removed from their classrooms and placed in a different room or they remained in their classrooms for data collection. Whether or not such variation in treatment for the children interacted in some way with the test results can only be answered by further research. Finally, differences relative to children's experience or lack of experience in listening to, creating, and retelling stories was a limitation because it was virtually impossible to control for these differences due to the large

sample size in this study. Within these limitations several conclusions and implications will be drawn.

Discussion of the Reliability of Judges' Ratings. The finding that the four judges were highly consistent in their ratings of twenty stories supports Applebee's finding of the high consistency among the judges' ratings of children's stories except for the number of incidents in the stories. The judges' ratings of stories in the present study were highly consistent on seven of the dependent variables. The low correlation coefficients of the number of incidents means that the judges could not consistently agree on the number of incidents in nonconserving and conserving children's stories.

One possible explanation for this finding could be that during the preoperational period of cognitive development, nonconserving children tend to retell stories in parts and their stories lack sequence. The incidents in their stories are juxtaposed and thus, lack logical sequence. The children may focus their attention on one particular incident, vacillate from one incident to another, and quite suddenly change characters with each new incident. Consequently, the judges may have had some difficulty judging whether or not the incidents were actually separate incidents or where one incident began and where the other ended in the stories.

The interpretation of the findings from the study of the reliability of the judges' ratings seems to affirm that the number of incidents in children's stories may not be a

useful and reliable factor in evaluating the content of first grade children's stories. However, it may be worthwhile to conduct a replication of the study and compare findings. Thus, it can be concluded that the seven characteristics with high reliability coefficients can be used by investigators and educators as valid sources of information in judging the content of first grade children's stories.

Discussion of the Five Characteristics of Plot

Structures. In the present study language maturity was measured by the frequency of the five characteristics of plot structures: number of words, number of T-units, average number of words per T-unit, number of characters, and number of incidents. The conclusion that nonconserving and conserving children are better able to retell a story after listening than to create their own stories implies that the differences in the two kinds of story stimuli, tell and retell, may have contributed to this conclusion. Story retelling predisposes a model for story language which is a part of sense of story, whereas personally created stories do not have a predetermined model for the child's language. The child's ability to listen, recall, and relate the sequence of incidents is predisposed by the retelling itself.

Discussion of Story Length. The finding that conserving children's stories contain more words than nonconserving children's stories suggest that conserving children's stories are more linguistically complex than nonconserving children's stories. The interpretation of this finding is that there is

a relationship between story length and linguistic complexity. It is noted here that two of the longest stories told in this study were provided by nonconserving children. One of the children's stories is in Appendix C. The nonconserving children's stories that were the longest also contained juxtaposition of incidents and generally lacked sequence. When nonconserving children's stories are compared with conserving children's stories there is some evidence of the amount of linguistic complexity in conserving children's stories. The conserving children's stories are usually coherent, contain a logical sequence of events, and contain story language.

However, not all nonconserving children's stories lack sequence and are incoherent; there are exceptions. Many nonconserving children have had experiences with stories and are quite capable of telling and retelling stories. In fact, two of the shortest stories (See Appendix C) in the sample were told by one nonconserving and one conserving boy.

Discussion of T-Units. The finding that conserving children's stories contain more T-units than nonconserving children's stories supports the finding from other studies (Hunt, 1965; Applebee, 1976) that the T-unit length is also directly related to linguistic complexity. The longer the T-unit, the more complex that language is likely to be in transformational terms. The conclusion from this finding is that conserving children's language as reflected in their stories is more linguistically complex than nonconserving children's language.

Discussion of Words per T-Unit. The finding that there are no significant differences in the average number of words per T-unit for nonconservers and conservers can be explained by noting the differences in story stimuli. Since it was found that personally created stories contain more average number of words per T-unit than retelling of stories, it can be inferred that the average number of words per T-unit is influenced by both story length and T-units which are quantitative measures of language maturity.

The average number of words per T-unit is obtained by dividing the total number of words in the story by the total number of T-units. If there are twenty-five words in a story and two T-units, there would be a high number of words per T-unit. If there are 125 words in a story and twenty T-units, there would be half the number of words per T-unit in the first example. In other words, a large number of words per T-unit is the result of a small number of words and a small number of T-units. On the other hand, a small number of words per T-unit is the result of a large number of words and a large number of T-units.

The finding that personally created stories contain more words per T-unit than retelling stories does not imply that personally created stories are better measures of linguistic complexity than story retellings. This finding does imply that story length, T-units, and words per T-unit are all directly related to language maturity.

Discussion of Characters. The finding that there is no significant difference in the number of characters in nonconserving and conserving children's stories indicates that characters, whether human, animal, animate or inanimate, can be considered important elements to children's creation and retelling stories. Since many children tend to identify with the characters in their stories, characters are considered important elements of story structure because they reflect the children's awareness of their internal complexity and range of experiences. Applebee (1978) believes that as children mature the number of characters in their stories increases.

Discussion of Incidents. The finding that there is no significant difference in the number of incidents in stories of nonconserving and conserving children's stories is supported by the inconsistency of the judges' ratings of the number of incidents in the children's stories of the present study. It can be implied from this finding that the number of incidents may not be a reliable criterion in evaluating the content of first grade children's stories. Furthermore, this finding suggests that the need for the use of incidents as a criterion may be deleted in future studies of this nature. This finding also implies that since children tend to create new characters with new incidents in their stories lends further support to the deletion of incidents as a valid and reliable factor in judging the content of stories.

In summary, the findings from the analysis of plot structures in nonconserving and conserving first grade children's

stories did not provide absolute evidence that conserving children had a more mature sense of story than nonconserving children. Although the examination of mean scores allude to the possibility of such a conclusion, the statistical test of significance did not support it.

The finding that conserving children's stories contain more words and more T-units implies that conserving children's language as reflected in their stories is more linguistically complex than nonconserving children's language.

The differences in the two kinds of stories indicated that story retellings contain more words, T-units, characters, and incidents than personally created stories. This finding is particularly significant since it implies that retellings of stories is a better measure of determining children's language maturity than creation of stories. However, it must be noted that the content of the story listened to may influence the content and linguistic complexity of the story retelling.

Discussion of Piaget's Decreasingly Egocentric Speech Features:

Discussion of Causality. The finding that there is no significant difference in the amount of causality in nonconserving and conserving children's stories implies that both groups of children use causality to some degree to structure their stories and to reduce the amount of complexity in their stories. Complexity in most areas of cognition is handled by the imposition of story structure. This finding of no significant difference is supported by research studies of Piaget (1972), Ames (1966), and Applebee (1976) who studied causality

in different ways in children's stories. Piaget concluded from his studies that preoperational children have difficulty expressing causal relations. The finding from the present study suggests that nonconserving and conserving children have difficulty expressing causal relations. Thus, it can be concluded that both groups of children occasionally use causality to structure their stories and to reduce the amount of complexity in their stories.

Discussion of Logical Justification. Piaget's study of logical relations in children's stories is supported by the finding that there is no significant difference in the amount of logical justification in nonconserving and conserving children's stories in the present study. Piaget found that logical relations develop much later than causal relations because logical relations require that the child sees relations in implicit judgments and ideas rather than two explicit events. The children in the present study expressed logical relations to some degree in their stories, but the differences were not statistically significant. This finding indicates that there is a need to conduct studies of developmental age trends with first and third grade children to determine the amount of logical justification in their stories.

Discussion of Sequence. The finding that there is no significant difference in the amount of sequence in nonconserving and conserving children's stories implies that both groups of children's stories were generally told in logical sequence. There was a significant difference in the amount

of sequence in nonconserving and conserving girls' and boys' stories. However, the mean scores reflected some differences in the finding that nonconserving children's stories contain less sequence than conserving children's stories. The possible explanation for this finding is that nonconserving children are not fully aware of the necessity of arranging their stories in any particular order. They understand and remember important parts of a story, but they fail to mention these parts because they assume the listener knows the story. Nonconserving children will omit certain parts of a story and will give more significance to the events rather than to the order of the events. Since this study has not provided conclusive evidence that conserving children's stories contain significantly more sequence than nonconserving children's stories, it cannot be concluded that nonconserving children are egocentric.

In summary, the findings that there are no significant differences in the amount of causality, logical justification, and sequence in nonconserving and conserving children's stories does not imply that egocentrism can be revealed by examining children's stories. What the finding suggests is that both groups of children frequently use causality, logical justification, and sequence to structure their stories.

Discussion of Differences in Nonconserving and Conserving Children's Stories. The differences in nonconserving and conserving children's stories may be attributed to the differences in story stimuli and to tell and retell modes. The finding that conserving children's stories contain more words and T-units than nonconserving children's stories suggests

that conserving children's language as reflected in their stories is more linguistically complex than nonconserving children's language. Retellings of stories after listening to stories, predispose children to provide detailed recall of the events and characters in the story. The stimulus of tell or retell influences the complexity of the child's response.

Discussion of Differences in Creation of Stories and Retelling of Stories. The finding that retellings of stories contain significantly more words, T-units, characters, and incidents, and less words per T-unit than personally created stories suggests that the ability to listen to, recall, and relate the logical sequence of stories is predetermined by the story retelling itself. This finding is supported by findings in other studies of children's stories (Pitcher and Prelinger, 1963; Applebee, 1976) that retelling of stories predisposes children to provide detailed accounts of events complete with formal opening, closing, and quoted dialogue. Story retelling is a model for the child's use of story language which is a part of sense of story.

The differences in the stories were apparent along all the dimensions of complexity measures of plot structures. The finding implies that story retellings reflect sense of story and measure the linguistic complexity of a child's language.

Two kinds of story stimuli, "Tell me a story about your picture" and "Tell me the story of The Gingerbread Man" seem to lead naturally to a predetermined mode of response.

The first story stimulus seem to predispose the children to provide descriptive details about their personal drawings such as "This here is a...", "This is a...", "There's a..."; "That's the...", and "These two...".

On the other hand, the second story stimulus seems to lead naturally to retelling the story as it was heard. Story retellings require children to remember details and provide logical sequence of events as they recall these events. Since story retellings require a predetermined mode of response, it is assumed that children's stories will be longer, contain more characters, and an increased number of incidents.

Thus, it can be concluded that nonconserving and conserving children can apparently retell a story after listening than to create their own stories. The conclusion, of course, is attributed to the differences in the story stimuli of tell and retell.

Discussion of Ancillary Findings. The main purpose of this study was not to investigate sex and race differences in nonconserving and conserving children's stories. However, significant sex and race differences were found which indicate that further research is needed to investigate these differences. Several research questions may be asked as a result of these ancillary findings: Are there significant differences in nonconserving and conserving black and white children's language experience stories according to the plot structures? Are nonconserving and conserving girls' stories longer than nonconserving and conserving boys' stories?

Do nonconserving and conserving girls' stories contain significantly more causality, logical justification, and sequence than nonconserving and conserving boys' stories? Are nonconserving and conserving girls' stories more linguistically complex than nonconserving and conserving boys' stories?

Implications for Theory and Practice

The reasoning underlying this research is that children's level of cognitive development should become one of the determinant factors in deciding when to begin formal reading instruction for pre-reading and beginning reading. Moreover, reading instruction needs to be geared toward children's specific level of cognitive functioning. First grade teachers need to be aware of the levels of cognitive development and provide concrete experiences which facilitate cognitive development in young children.

The results of the present study have implications for both the classroom teacher and the reading specialist. For the classroom teacher, this study adds more support to previous findings that children's stories contain valuable information about the children themselves and that these stories reflect their thoughts, language, and experience. For the reading specialist, this study implies that some of the characteristics found in children's stories may help them better understand the egocentric natures of the children they teach as well as children's understanding of story structure. The content of

children's stories may also be used as a diagnostic source of information to determine the amount of language growth or maturity and complexity in children's stories.

This investigation was an initial step in exploring a possible relationship between egocentric natures of children and their understanding of story structure. The results of this study suggest that future investigations between cognition and oral language as reflected in children's stories should be conducted.

The theoretical implications from this study were derived from Piaget's theory of cognitive development. The results of this investigation support a number of presently existing innovations which encourage self-initiative or self-discovery learning such as progressive education, open education, and discovery learning in the classroom.

An important theoretical implication from the child development specialists is that young children learn best from concrete experiences and activities. As children are exposed to concrete activities, they are being given the opportunity to manipulate and explore objects. The principle that learning occurs through the child's activities suggests that the teacher's major responsibility is to provide for the child a wide variety of interesting materials on which the child may act. This implication is supported by Piaget (1973) who reported that children need a long period of pure practice and action with objects and activities

to formulate the substructure of speech which develops later. As the child acts externally on objects, the child's thoughts become internalized. These internalized thoughts are no longer based on direct action but on symbolisms of speech, mental pictures, gestures, and pure thought.

The manipulation of objects is a prerequisite for the development of higher levels of verbal understanding. The higher levels of cognitive development (intuitive and verbal) depend upon the lower levels of cognitive development (the sensorimotor period). The young child cannot progress to the higher levels before establishing a basis in concrete manipulation. Concrete experiences, therefore, precede learning from verbal explanation or written materials. Children must be active and have opportunities to be active, and not passive in the classroom. They need to touch objects and find out what these objects do. They also need to explore and learn through self-discovery activities in order to facilitate the higher levels of cognitive development.

Kindergarten and first grade children tell and listen to stories. It is through repeated exposure to a variety of oral and written language activities that children are likely to develop what is sometimes referred to as linguistic awareness (Weaver, 1978). Linguistic awareness is the awareness of the nature of one's own language and includes knowing what reading is: knowing the conventions of print such as reading from left to right, top to bottom, and knowing the concepts of

a letter, word, sentence, and story. A pedagogical implication is that teachers should provide a curriculum rich in oral language activities that foster the development of children's language through listening to, telling and creating stories. In other words, the curriculum sequences and the instructional classroom should closely match or reflect the child's level of cognitive functioning.

Rather than waiting for the match to occur between a child's cognitive processing and cognitive processing required in reading, classroom teachers and reading specialists can facilitate the match and help foster cognitive readiness for reading. It is recommended that reading tasks that enhance children's cognitive and perceptual operations as related to reading are provided.

An innovative approach that presents a match between cognitive processes and reading tasks is the language experience approach. LEA is classified under the theoretical framework of cognition since it uses the child's language, experiences, and thoughts as the content of the reading material. One of the reading tasks which may facilitate cognitive development is the production of ideas through authorship. Through authorship children learn the relationship between their spoken and written language and also learn to accept another person's point of view as they engage in discussions with their peers and adults.

Socially-oriented activities where children are playing and working together help them to take into account another

person's point of view. Another implication for practice is that of social interaction which promotes the decline of egocentrism as children's views conflict with their peer's views. When children's personal views are questioned by others, they must defend their ideas, justify their opinions, clarify their thoughts in an attempt to convince others of the validity of their ideas. It is, therefore, recommended that classroom teachers allow children freedom to engage in socialized conversations with their peers and adults, share their experiences, ideas and thoughts, and argue.

An implication for beginning reading instruction is that classroom teachers and reading specialists can provide children with opportunities to tell and retell stories to increase their oral language proficiency and develop sense of story. Reading tasks which develop sense of story involve creating, telling, listening to, and retelling stories. Brown (1977) is supportive of the teacher's role in the development of sense of story. He believes that the most obvious source for the development of sense of story is stories themselves. Sense of story includes story language and the logical sequence of events generally associated with stories. Reading comprehension can be improved as children are able to use prediction of syntax and meaning in listening to, creating, and retelling of stories. It is recommended that classroom teachers and reading specialists provide children with oral language activities that encourage listening

to, telling, and retelling of stories. These activities promote children's natural cognitive and language processes.

Finally, the implication for educators is the need for college courses for prospective teachers, beginning teachers, and experienced teachers to become knowledgeable about cognitive development, language development, and their inter-relatedness.

Discussion of Observations During Story Dictation

As children dictated their stories to the investigator who wrote what they said, it was observed that twelve children made prior predictions about their stories. The children commented that their stories were: "...going to be a little different," "going to be short," and asked if they "could put anything in the story."

Several children had difficulty remembering parts of the story retelling and needed some prompting such as "...then what happened?" or "What happened next?" These children made the following comments: "I forgot what I said," "I don't remember too well," "I can't remember it all, but I'll tell you what I remember," "I forgot the saids in the story," "Do I have to get the animals in order?", "I forgot what she put on the gingerbread man. Can I make up something?", "That's all I remember so far," and "I remember the story from my book at home." It seems that these children were using their prior experiences with stories and understood that they had to remember the parts of the story as well as worry about

the order of events and the names of specific animals.

While several children made predictions about their stories prior to dictating them, other children edited their stories during the story dictation process. There were three children, one nonconservor and two conservors, who were overly concerned about what was actually being written for them. These children made the following comments: "Don't write this down. I'm just thinking in my head out loud." "Read to me what I just said," "Oh, I just screwed up again! I didn't want you to write that down."

One conserving boy seemed overly concerned about his performance as he constantly asked, "How am I doing?" I didn't know that I could think of that many words for a story. That's the longest story of all, isn't it?"

A nonconserving boy wanted to know the exact location of specific words during story dictation. He asked, "Where is the word tail?" and "Where is the word stop?" Although he repeatedly said and so he instructed the investigator not to write the word so.

A conserving girl told the investigator the exact location of punctuation marks during story dictation. After the completion of a dictated sentence she would say, "Put a period there," and "You forgot to put the period at the end."

The observations of children's editing during the story creation process provide questions for future research in studying how children view the written form of their oral language. Research questions such as: Do first grade children

edit the stories they write? Are there significant differences between children's editing while dictating stories and editing while writing stories? What are the differences between nonconserving and conserving children's editing of their dictated language experience stories? Does editing reflect children's awareness of their natural oral language? Does editing relate to reading readiness test scores? Is editing a diagnostic source of information for children's reading readiness? These questions can be answered through future research studies.

Recommendations for Future Research

Knowledge of the relationship between language and cognitive processes can have great practical value for both the classroom teacher and the reading specialist because it can provide insight into the reading process as it relates to natural language and cognitive functioning. More specifically, this knowledge can help educators recognize and identify the differences between nonconserving and conserving children's cognitive ability to deal with reading tasks.

Educators and researchers need to further examine the nature of the tasks designed to teach reading and the theoretical basis for these reading tasks. Reading involves two processes: language process and cognitive process. Instructional procedures should be evaluated and re-evaluated in relation to each of these processes.

Future research studies on children's sense of story should be directed in five areas of investigation: 1) developmental

age trends, 2) longitudinal research, 3) sex and race differences, 4) editing during story creation and dictation, and 5) themes in stories created by children.

The first area of research should be conducted to develop studies of developmental age trends to investigate whether sense of story is developmental in children ages five to ten. The second area of research should involve longitudinal studies to determine what happens after the child has learned to read. Systematic follow-up investigations of children's stories which expand the data base from the pre-reading and beginning years at the time when children can read fluently or are considered mature readers. It would be worthwhile to investigate the relationship between beginning readers' and mature readers' sense of story to their language and thought processes.

The third area of investigation should explore sex and race differences in nonconserving and conserving children's stories. The findings from the present study suggested that regardless of children's race if similar experiences with stories are provided, children will tell stories that reflect their linguistic complexity. Sex differences in children's stories have not been conclusively substantiated in research studies involving the relationship between language and thought processes. This is an area of future research to determine sex and race differences in nonconserving and conserving children's stories according to plot structures and decreasingly egocentric speech features.

The fourth area of future research is that of children's

editing during story creation and dictation. Future research is needed to determine how children organize and reformulate the cognitive structures while viewing the written forms of their oral language. There are future implications from research of this nature that can reveal how children reorganize and reformulate their cognitive structures while reading their oral language and other reading materials.

Finally, themes and topics in children's stories could be studied. For example, themes of violence were more prevalent in children's personally created stories than their story retellings. The following words and phrases were excerpted from children's personally created stories: "die, killed, drown, bite, hit, burnt, blow it up, shooting, destroyed, ate the people, starve, rot, injured, run over, dead, crashed, death, sting, bloody, fire, and back-handed him." The observations of these violent terms raise several questions: Why are violent words used by young children? Does the viewing of television influence the children's use of these words? What factors contribute to the children's use of these words? Future research can be conducted to determine if a relationship exists between these psychological terms of violence in children's stories and their ego-centric natures.

In summary, many research questions can be answered to establish a more precise relationship between thought and language processes as reflected in children's stories:

What is the relationship between formal operational period of cognitive development and oral language as reflected in children's stories? Can children's stories be used as predictors and sources of information for educators to assess children's language growth? Can levels of cognitive development be used as predictors of reading readiness? What are the differences in story retelling of beginning readers and mature readers? Can story retelling with beginning readers and mature readers be used to determine their lower and higher cognitive levels? Future research studies can answer these questions.

Concluding Statement

The purposes of this study were to investigate first grade children's oral language expression as reflected in their stories to reveal their egocentric natures and sense of story, and to determine if a relationship existed between plot structures and the decreasingly egocentric speech features. The main conclusions are summarized below:

Nonconserving and conserving children can retell a story previously heard much better than they can create their personal stories.

Conserving children's language is more linguistically complex than nonconserving children's language.

Nonconserving and conserving children's cognitive functioning and understanding of story structure can be inferred to some degree from their stories.

Story retellings are better measures of children's linguistic complexity than creation of stories.

Examining children's oral language production merits further research to investigate additional features of story structure and cognitive development.

The findings and conclusions from this study imply that classroom teachers and reading specialists can use children's stories as diagnostic sources of information to study children's levels of cognitive functioning and understanding of story structure.

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APPENDIX A

Letter to the Director of Assessment Unit

Memorandum to the Director of Retail Reading Center

Letter to the Principals

Letter to the Teachers

Letter to the Parents

Memorandum to the Judges

Appendices

APPENDIX A

Letter to the Director of Assessment Unit

Memorandum to the Director of DeKalb Reading Center

Letter to the Principals

Letter to the Teachers

Letter to the Parents

Memorandum to the Judges

1691 Laurens Drive, S. W.
Atlanta, Georgia 30311
December 1, 1978

Dr. Donald Schultz, Director
Assessment Unit
2770 North Decatur Road
Decatur, Georgia 30033

Dear Dr. Schultz:

I am a doctoral student at Georgia State University. I plan to conduct a research study in the DeKalb School System. I am formally requesting your permission to conduct such a study with the first grade children in four elementary schools.

The study will involve collecting two stories from each first grade child. These stories will be analyzed later by judges. The study will also involve the administration of a standardized conservation test to the children to determine if they are nonconservers or conservers.

The entire study will require approximately three to four weeks of visitations and data collection in the schools. I would like to thank you for your cooperation and assistance in this research endeavor.

Respectfully,

Carolyn J. Jackson

December 1, 1978

MEMORANDUM TO: Dr. Betty Moore

FROM: Donald G. Schultz

REFERENCE: Requested Research Study

This is to introduce Mrs. Carolyn J. Jackson, a doctoral student at Georgia State University, who is engaged in a study in the area of reading. The study will utilize first grade students in multi-racial schools as a sample population.

This study is being approved by my office subject to the following stipulations:

1. That the study will be conducted under the supervision of the Reading Center and with your approval. Any adjustments necessary in the research design or in the population selected would be a decision between you and Mrs. Jackson.
2. Approval by the principals and first grade teachers involved. This approval should be based upon consideration of other obligations and tasks imposed upon the school of other than an unusual nature.
3. Parental approval in writing will be required of the children who will be involved in the study. The permission letter to the parents should be approved by you prior to its being sent out.
4. Students must remain anonymous in the written study.
5. Parent release in writing will be required if any school data or test scores are needed.

Mrs. Jackson will discuss her study with you in detail. If you have further questions please contact my office.

cc: Mrs. Carolyn J. Jackson

1691 Laurens Drive, S. W.
Atlanta, Georgia 30311
December 15, 1978

Dear Principal:

I am a doctoral student at Georgia State University. I plan to conduct a research study with the first grade children and teachers in your school. I am formally requesting permission to conduct such a study.

The study will involve the collection of two stories from each first grade child. These stories will be later analyzed by judges. The study will also involve the administration of a standardized conservation test to the children to determine if they are nonconservers or conservers.

The entire study will require approximately one or two weeks of informal visitations and data collection in each school. I am willing to work within the schedules of individual classroom activities and school functions.

I would like to express my appreciation for your support, assistance, and cooperation in this research endeavor.

Respectfully,

Carolyn J. Jackson

1691 Laurens Drive, S. W.
Atlanta, Georgia 30311
December 15, 1978

Dear First Grade Teachers:

I am a doctoral student at Georgia State University. I plan to conduct a research study with the first grade children in your classrooms. I am formally requesting permission to work with the children that you teach.

The study involves the collection of two stories from each child. These stories will be later judged by four judges. The study also involves the administration of a standardized conservation test to the children to determine if they are nonconservers or conservers.

The entire study will require approximately three to five days of informal visitations and gathering data from your classes. I am willing to work within the planned schedules of your classroom activities.

I would like to express my appreciation to you for permitting me to visit with you and your children.

Respectfully,

Carolyn J. Jackson

1691 Laurens Drive, S. W.
Atlanta, Georgia 30311
December 15, 1978

Dear Parents:

I am a doctoral student at Georgia State University. I plan to conduct a research study in your child's school. I am formally requesting permission to use your child as one of the subjects in the study. Your child's name will not be used in the written study.

Your child will be given a standardized conservation test to determine if he or she is a nonconservers or conservers. Your child will tell two stories to the investigator who will write what the child says.

I would like to thank you for your cooperation in the research project. Please sign below and return this letter to your child's teacher as soon as possible. If you have any questions, please call me at 344-1455.

Respectfully,

Carolyn J. Jackson

_____ Yes, my child may participate in the research study.

Parent's Signature

Date

May 14, 1979

MEMORANDUM TO: Judges: Mrs. Edith Blount, Mrs. LeNeve
Grainger, Dr. William Hammond, Dr.
Brenda Tiller

FROM: Carolyn J. Jackson, Investigator

REFERENCE: Rating Children's Stories

I am honored that you have consented to become a judge in rating first grade children's stories in this study. Your valuable time, interest, and efforts are greatly appreciated.

Your responsibilities as a judge are listed below:

- (1) To attend an orientation session with the investigator and other judges.
- (2) To understand the purposes and procedures of this study.
- (3) To learn how to use the Data Collection Chart.
- (4) To receive copies of 90 to 92 stories to be rated by each judge.

The meeting will be held on Saturday, May 19, 1979 at Georgia State University, Urban Life Building, Conference Room 673 at 10:00 a.m. If you have any questions, please call me at 344-1455.

Enclosure: Abstract

APPENDIX B

Orientation Session Agenda

Rating Children's Stories Criteria:

Five Characteristics of Plot Structures
Piaget's Decreasingly Egocentric Speech Features

Orientation Session

Saturday, May 19, 1979

AGENDA

Carolyn J. Jackson
Investigator

GSU, Urban Life
Conference Room 673

- I. Introduction of the Judges
Mrs. Edith Blount
Mrs. LeNeve Grainger
Dr. William Hammond
Dr. Brenda Tiller
- II. Purposes and Procedures of the Study
- III. Use of Data Collection Chart
- IV. Reviewing of Stories to be Rated
- V. Questions and Answers

RATING CHILDREN'S STORIES CRITERIA

Five Characteristics of Plot Structures

Story length or number of words is a simple count of the number of words in the story. Titles are not included; compound words and contractions count as single words.

Number of T-units are counted using Hunt's (1965) criteria. The title and "the end" are excluded from this count. With embedded dialogue, the first embedded unit is counted with its frame; successive units are separately counted (i.e., "The fox said, "Hi, gingerbread man!/ Are you going somewhere?" which was taken from a child's story in this study is counted as two T-units).

Average number of words per T-unit is the total number of words in the story divided by the total number of T-units in the story.

Number of characters are classified into three groups: people, animals, and animate objects that 'come alive' in a child's story. Each character is counted only once even though it has been mentioned several times in the story. The number of characters is the count of the number of different characters having a role in the story. The judges were instructed to include the storyteller as a character if he or she were involved in the action and also to include all active animals and animate objects that 'come alive' in the child's story. Groups of people or animals are counted as a single character unless the members perform separately identifiable actions and these are counted as one character even if in number, i.e., four boys, two dogs and so on.

Number of incidents is an estimate of the number of different events that take place in the child's story, taking each event as being a series of related actions occurring at the same point in space and time. Introductions such as "This is a story about..." are not counted as separate incidents, but in other cases the introduction of new characters usually marks a new incident.

Piaget's Decreasingly Egocentric Speech Features

Causality or causal 'because' is the relationship between two explicit events and involves explanation. The mark of the causal 'because' is noted in children's stories. If the word 'because' is present and demonstrates the relationship between two explicit events, then the number 1 is scored for the presence of this characteristic in the child's story. If the word 'because' is not present in the child's story, then 0 is recorded.

Logical justification or logical 'because' is the relationship between two implicit ideas and involves demonstration. The mark of the logical 'because' is noted in children's stories. If the word 'because' is present and demonstrates two implicit ideas, then the number 1 is scored for the presence of this characteristic in the child's story. If the word 'because' is not present in the child's story, then 0 is recorded.

Sequence or logical 'sequence' in the child's story means that the story contains logical, coherent, and integrated order of events. If the story is logically sequenced, then the number 1 is recorded. If the child's story is illogically sequenced, then 0 is recorded.

APPENDIX C

EXAMPLES OF STORY RETELLINGS BY NONCONSERVING AND CONSERVING CHILDREN

Longest Story for Nonconserving Girl
Longest Story for Conserving Girl

Shortest Story for Nonconserving Boy
Shortest Story for Conserving Boy

Longest Story for Nonconserving Girl (7:1)

It was this little old lady she got tired of making the old things over and over again. She made a gingerbread man. She took some paper and she took some scissors and cut the paper. The gingerbread man started to run around the kitchen. The old lady said, "Stop! Stop! You're a surprise. We want to eat you." "No! No! I am the gingerbread man," he said. And then the gingerbread man, he said, "I can run. I can run. I am the gingerbread man. I can run. I can run." He ran out the kitchen out the front door. He found a brown cow laying in the grass. He was looking to see who was coming to take him somewhere. The gingerbread man said, "Do you want to come where I'm going because I'm running away from home?" After that the brown cow said, "No! No! Don't run. I want to eat you." The gingerbread man said, "No! No! I'm the gingerbread man. I can run. I can run. I can run." He said, "You can go with me if you want to," he said. The brown cow said, "Jump on my back and I'll carry you where I'm going." The gingerbread man said, "No, I will carry you where I'm going first. I'm going to carry you back to my home and let the old lady cut you as a gingerbread man." The cow got scared of the cat because the cat done scratched the gingerbread man and the cow. So the cow jumped up. When it jumped all the way up to the sky, he saw the sun. When he saw the sun he knew the sun was going to burn him. So he tried to jump down. Before he jumped down the sun had already burned him. When it burned him on the place where you sit down at, when he fell down he said, "Ow! that hurts!" The cow and the sun had a fight. The gingerbread man didn't watch it. All he did was run. The cat said, "I'm going to eat you for my snack tonight." "No! No! Don't eat me. I'm the gingerbread man. I can run. I can run. I can run." The cat said, "No paper gingerbread man can run." He said, "I can." "You are made out of things what you can eat. Why aren't you colored?" "The old lady didn't want to color me. She wanted to eat me." The cat ran after the gingerbread man. The cat stopped to try and try and try to run after him. The cat lay back down in the sun. He found a pond and lay back down in the sun. He met the fox. That was the last thing. Then the fox had a big dinner to eat. Nobody else was there to tell the gingerbread man I was made out of construction paper. Nobody told him that. So the old lady tried to tear the gingerbread man made out of construction paper. She didn't have time. The fox said, "Do you want to climb upon my back so you won't get wet? I don't want you to get wet so climb upon my back." The gingerbread man said, "I will climb upon your back." They went deeper and deeper into the water. He climbed upon his back. The water got deeper. "Climb upon my head so you won't get wet." So he did it. "WHOOOPS! Be careful up there. I don't want you to fall off because you might fall into the water and tear up. I don't want you to tear up." So the fox said, "Climb upon

my nose." The gingerbread man knew he ate that big dinner.
So the fox gobbled him all up. That's the end.

Longest Story for Conserving Girl (6:8)

There was an old woman and an old man. The old man was working in the garden. The old woman wanted to make something for her husband. So she was thinking about what she could make. She thought maybe she could make a gingerbread man. So she got some dough and she put mints for his buttons and a green hat and peppermint eyes and mouth. She put him in the oven. So while she was waiting for him to be cooked, she sang a song to herself. Then she opened the oven and POP! the gingerbread man came out, and runned across the kitchen. The little old woman said, "Stop! Stop! I want to eat you. You are a surprise." The gingerbread man said, "No! No! You can't catch me. I'm the gingerbread man." And he ran out the door. The old man cried, "Stop! Stop! I want to eat you." The gingerbread man said, "Run, run as fast as you can. You can't catch me, I'm the gingerbread man." The old woman and the old man got really tired of running because they were running so much they sat down under a tree. Then on down the road the gingerbread man met a cow. The cow said, "Stop! Stop! I want to eat you." The gingerbread man said, "Run, run as fast as you can. You can't catch me, I'm the gingerbread man." The cow ran and ran and he got really tired and he had to sit down. On down the road the gingerbread man met a horse. The horse said, "Stop! Stop! I want to eat you." The gingerbread man said, "Run, run as fast as you can. You can't catch me, I'm the gingerbread man." The horse ran so much that he got really tired and he had to sit down. And on down the road the gingerbread man came to a garden. There was a cat laying down in the sun. The cat said, "Stop! Stop! I want to eat you." The gingerbread man said, "Run, run as fast as you can. You can't catch me, I'm the gingerbread man." The cat ran and ran. The gingerbread man was way in front of him. And then he saw another garden and he just laid back down in the sun. Then the gingerbread man came to a river. And there was a fox laying beside it. And the fox said, "Are you trying to get across the river? I just finished my supper and I am going to swim across the river to get back home." The gingerbread man had remembered the fox had just finished his supper and said, "Okay." He said, "Climb upon my back and I will take you home. The water is getting deeper here. Climb upon my head so you won't fall." "Oh, my!" he said, "It is getting really deep here. Climb upon my nose." The gingerbread man had still remembered that he had just finished a big supper. Right when he got there CRUNCH! the gingerbread man was gone. From that day on the old woman always remembered to open the oven when the gingerbread man was finished.

Shortest Story for Nonconserving Boy (7:1)

A lady baked a gingerbread man. And then the gingerbread man ran away. He saw a cat, a cow, and a fox. Then the fox ate him.

Shortest Story for Conserving Boy (7:3)

The gingerbread man ran away from the old man and the old woman. He passed a cow and a horse. The fox ate the gingerbread man.

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